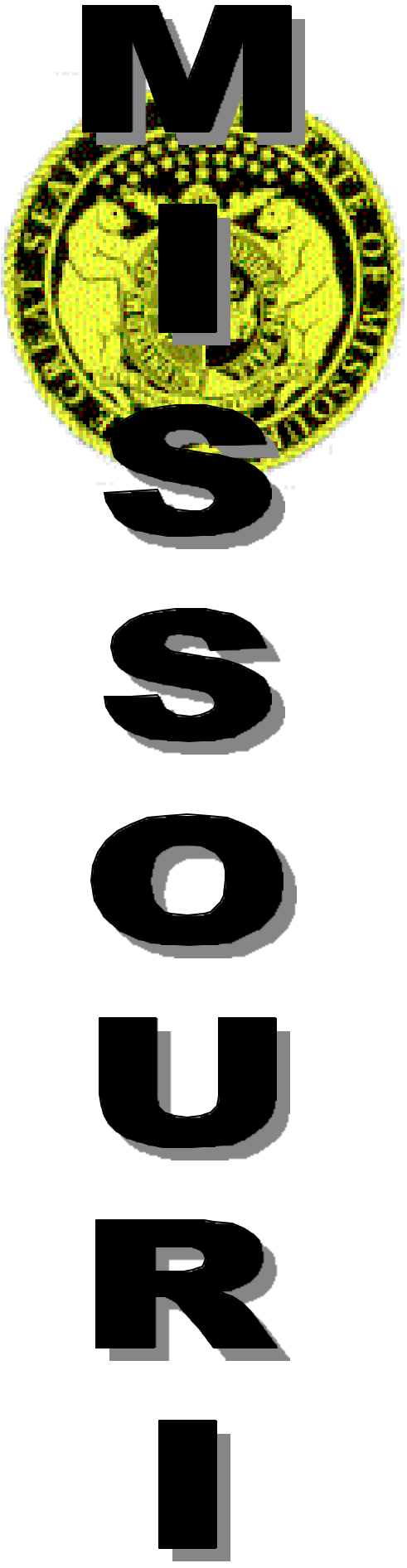

COMMERCIAL VEHICLE OPERATIONS

STATE BUSINESS PLAN

Dated: May 15, 1998

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Executive Summary

Missouri has a long history of commitment to safety of the motoring public on the highways of this state. Missouri is also committed to implement a regulatory environment that ensures safety without undue cost to the motor carrier industry. The state of Missouri is unique in its geographical location with four major interstates running through the state. Each of the major interstates has a fairly high percentage of motor carrier traffic to total daily traffic. Under current procedures, all trucks must stop at weigh facilities when scales are open. As state resources become more critical, the regulatory environment must be evaluated along with the need to facilitate the movement of goods over our highways. This business plan is intended to assist this state in improving its commercial vehicle operation regulation, guide the deployment and installation of intelligent transportation systems and to implement these systems in an efficient and cost effective manner.

During the course of this document, a history of Missouri's commercial vehicle operation activities will be described; a detail list of completed projects will be outlined; a description of how this business plan was developed; the framework of the current regulatory environment; the strategic direction of commercial vehicle operations in this state as well as a description of current and future projects for implementation of intelligent transportation systems.

The goals of this plan supports this state's commitment, mission and efforts in developing ways to apply intelligent transportation technology that leads to a safer, more efficient and cost-effective commercial vehicle operations in the state of Missouri. These goals are to:

- Ensure the safe and legal operation of both interstate and intrastate commercial vehicles operating within and through the state of Missouri.
- Improve the effectiveness of the commercial vehicle roadside program.
- Improve the effectiveness of the commercial vehicle deskside program.
- Administer and enforce the laws relating to all commercial motor vehicle registration with efficiency and fairness.
- Create projects that are consistent and compatible with the Commercial Vehicle Information Systems and Networks architecture and its deployment.

Missouri began looking at institutional barriers to commercial vehicle operations in 1992 with a formal report completed in 1993. At the national level during the same time period, programs were being developed in the commercial vehicle arena to reduce congestion, reduce motor carrier costs, improve highway safety and streamline

credential administration. The Commercial Vehicle Information Systems and Networks initiative began to develop an infrastructure to interchange information electronically between public agencies, motor carriers and other parties through a standard system making use of new technologies. Other initiatives and programs have been implemented to improve inspections, safety information, provide weather information and manage the flow of traffic. Some of these same concerns and needs at the state level have caused this state to implement or propose similar initiatives and programs.

This state has an opportunity to begin to reach its goals and objectives. This opportunity is manifested with the following completed projects or activities.

- The state has in place several hundred miles of fiber optic cable network on state highway right-of-way. This fiber network will provide the state an avenue to transmit data at speeds necessary for electronic clearance of commercial vehicles traveling on the highway at highway speeds without having to exit the highway system.
- The state has safety strategies in place to target high-risk carriers.
- Missouri vehicle inspection data is uploaded into the national inspection data system.
- Software has been installed to look at national inspection data at the roadside.
- Missouri has participated in an electronic credential pilot program and an operational test for verification of fuel requirements between participating states.
- The state operates and maintains 19 continuous vehicle count and classification sites at the roadside of which 11 sites also use weigh-in-motion detection equipment.
- A very active outreach program to assist the motor carrier industry.
- A commercial vehicle operation standing committee made up of state regulatory staff with the Department of Transportation as the lead agency and with active participation from the motor carrier industry and the Missouri Division, Office of Motor Carriers, Federal Highway Administration.

With these projects in place, this state is on the edge of implementing new available technologies in the intelligent transportation system for commercial vehicle operations. The ability to implement new technologies depends on the availability of funding. It is hoped that the state of Missouri will be selected for future special federal funding to speed implementation. Until that time, this state will continue to develop and install computer programs and systems, set up a test site for credential, size and weight verification, implement processes electronically and share information between agencies and other states as state funding and resources are available.

The state feels that it has ambitious projects in the works or planned over the next three or four years. These projects include:

- Increase the number of computers with inspection and inspection selection software at the roadside weigh facilities.
- Develop and install a wireless, mobile, enforcement data system to generate electronic driver/vehicle reports, accident reports and other officer reports that will be entered in a local area network. This system would allow for wireless verification of vehicle registration, credentials, commercial driver licenses status and other information.
- Implement a multi-state permitting program for oversize/overweight vehicles.
- Develop and implement a system to dispatch enforcement for non-compliant drivers that fail to pull into weigh facility when signaled to enter.
- Implement electronic filing of all regulatory credential requirements.
- Implement credential, weight and size verification at mainline speeds without having to exit the highway system at three weigh facilities on major interstate highways.
- Interface with a central repository for fuel and license credentials and payment of fees.

The inspection software, mobile enforcement data system and the multi-permit program projects began prior to this year and will be completed by the end of the calendar year 1999. The enforcement dispatch system also began prior to this year and has a completion date of mid-year 2000. The project for screening vehicles for compliance on the highway began in January 1998 and is earmarked for completion by the end of this year. The remaining projects have staggered begin dates within the next two years.

It is anticipated that the costs, source of funding and annual operating expense for these programs will be:

	STATE FUNDING	FEDERAL FUNDING	TOTAL	EST. YEARLY OPERATING COSTS
Aspen Deployment	**$76,920**	**$307,680**	**$384,600**	**$324,462**
Mobile Enforcement Data Systems	**$213,152**	**$140,606**	**$353,758**	**$12,000**
Joining SASHTO Multi-Permit Program	**$11,750**	**0**	**$11,750**	**$10,120**
Computer Aided Dispatch	**$335,361**	**$361,639**	**$697,000**	**$20,000**
Implement Mainline Screening at 1 Site	**0**	**$750,000**	**$750,000**	**$38,000**
IFTA/IRP Clearinghouses	**$40,000**	**$160,000**	**$200,000**	**$10,000**
Implement Electronic One Stop Shop	**$250,000**	**$250,000**	**$500,000**	**0**
Implement Mainline Screening at 2 Sites	**$100,000**	**$900,000**	**$1,000,000**	**$75,000**
TOTAL	**$1,027,183**	**$2,869,925**	**$3,897,108**	**$489,582**

The Standing Committee will need to monitor funding sources and submit project plans for requests for future implementation funds. State matching funds will be needed if Missouri is selected for additional commercial vehicle operation deployment.

Outcome:

The state of Missouri believes that participation in intelligent transportation system for commercial vehicle operations will help the state achieve management and productivity goals. By Implementation Order, COMAP 95-01, signed on March 22, 1995, the Governor of the State, Mel Carnahan, established an Excellence in Customer Service Oversight Team to provide leadership in implementing efforts to make state government more customer focused. The ITS/CVO initiative is an area where Missouri can improve service to our customers. On July 12, 1996, the Governor also indicated by letter to Rodney Slater, Administrator, Federal Highway Administration, that he supports Missouri's deployment of the Commercial Vehicle Information Systems and Networks program which will allow motor carriers and regulatory agencies to exchange information and conduct business electronically.

This business plan is a living document that will be evaluated and modified formally every two years and informally as needed. The state will continue to promote intelligent transportation systems through it outreach program and participation in a regional consortium of states. Additional motor carrier and state training will be needed as well as continued communication between industry and private concerns about ITS/CVO programs. The future will hold many challenges and exciting changes. Everyday, new technologies are developed that will make implementation of programs such as these easier and cheaper to implement. The industry supports changes that allow them to equally compete with each other in a cost efficient manner without sacrificing safety.

1.0 Introduction

Enactment of the Motor Carrier Act of 1980 and the Bus Regulatory Reform Act of 1982, caused motor carrier entry into the national transportation market to change dramatically. For-hire motor carriers prohibited from this market were able to afford and timely enter this previously forbidden, or difficult to penetrate, industry. The number of motor carriers dramatically increased in response to the change in federal law. As a result, the financial stability of the companies was not regulated; therefore, safety became a serious concern. Between 1980 and 1993, the number of vehicles operating in and through our state increased over 100%. Currently, 36,000 for hire truck and 1,600 bus motor carriers (includes intrastate, interstate exempt and regulated interstate) are authorized to operate in and through Missouri. In addition, there are 2,196 private motor carriers with interstate pro-rate plates. It is projected that the number of for-hire and private motor carriers will continue to grow each year by 5 percent.

This tremendous growth requires Missouri to look at all aspects of regulation and enforcement of commercial vehicle operations and the safety concerns for the citizens of this state. Safety of the motoring public is a major concern of this state. Financial responsibility of the motor carrier, maintenance of equipment in a safe manner, qualified drivers and safe motor carrier operations on Missouri's highways are of key importance. One safety concern is the problem occurring in Missouri while in the vicinity of a fixed interstate weigh station. The volumes of commercial vehicles are so great that at times trucks are backed out to the driving lane on the interstate. When traffic backs up to a dangerous level the station shuts down and commercial traffic by passes the weigh station unchecked in order to relieve congestion. Traffic volumes at the busiest weigh scales carry approximately 8,000 trucks or more each day.

The nature of carrier transportation in general has changed from a state specific focus to a national or even an international one. Missouri became a member of the International Registration Plan (**IRP**) in 1973 and the International Fuel Tax Agreement (**IFTA**) in 1990. The Inter-modal Surface Transportation Efficiency Act (**ISTEA**) required all states to become participating members of these two programs by September 30, 1996. These agreements have led to further improvements in communication and record keeping between and among states.

Technology must be incorporated in the assessment of the needs of the growing commercial transportation industry as well as State and Federal needs for compliance of regulations and collection of revenues. Missouri has made significant infrastructure investments in the communication and computer technology to improve the safety and efficiency of commercial vehicle operations. Missouri's vision is that through implementation of an electronic screening program at the weigh stations, vehicles will have safety status, credentials and weight checked electronically at mainline speeds. Commercial vehicles that are safe with all electronic credentials in order and

an acceptable out-of-service and accident history rating will not be required to stop at weigh stations.

Current levels of enforcement and regulation compliance can only be maintained if all state agencies in Missouri begin to work smarter and better. The State of Missouri is committed to improving management and productivity and to provide more service for tax dollars spent. One aspect of improving management and productivity is the commitment of Missouri's governor to provide more service for tax dollars by focusing on customer satisfaction. The governor established an Excellence in Customer Service Oversight Team to assure that state departments implement this customer focus initiated by Implementation Order, COMAP 95-01, signed on March 22, 1995. The regulation and enforcement of commercial vehicle operations has been identified as an area where Missouri's government can improve its service to customers.

Missouri has put forth considerable effort in the area of Intelligent Transportation Systems (**ITS**) far beyond the Commercial Vehicle Operations (**CVO**) area. Missouri is committed to expansion of its Motorist Assist Program (freeway service patrol) with the establishment of a cellular call-in system, a roadway reference marking system, an improved communication system between state and local jurisdictions and operation assistance for a Traffic Information Center. The state is also developing a plan to implement a weather network that would collect and disseminate weather information and road surface and subsurface conditions from a statewide system. This CVO plan is just a component of Missouri's overall ITS plan.

This business plan was developed by the state's ITS/CVO Standing Committee to guide it to deployment of ITS technology. This plan will outline the participation of the state agencies and industry in the deployment efforts, the current regulatory environment, the description of state enforcement processes, completed ITS/CVO projects, the strategic direction of Missouri's commercial vehicle operation activities and its approach to implementing and managing these projects.

The plan described within is the first revision of its state business plan and will provide the following information:

- Executive Summary
- Section 2.0 Background of ITS/CVO and Business Plan Development
- Section 3.0 Overview of the Business Planning Process
- Section 4.0 Current CVO Environment
- Section 5.0 Strategic Direction for ITS/CVO Activities
- Section 6.0 CVO Business Plan
- Section 7.0 Training
- Section 8.0 Contact Names
- Section 9.0 State Agencies' Names, Addresses and Web Sites

2.0 Background of Missouri's ITS/CVO Activity and Business Plan Development

An Intelligent Transportation System will encircle our entire nation's transportation system. As technology progresses these advancements will be applied to the transportation infrastructure. These new technologies will save time, monies and demands that are being placed on this nation's infrastructure. ITS will guide our legislative bodies to help address our aging transportation network. ITS applications for commercial vehicle operations will encompass electronic clearance, automated safety inspection systems, onboard safety monitoring systems, automated credential verification, managing fleet operations and quick response to hazardous materials incidents.

States play a critical part in the design and deployment of the national intelligent transportation system. In the current era of questioning and justifying state and federal activity and the large amount of monies needed to invest in new technology, states are cautious to embrace ITS without knowing how much it will cost and what savings the states can expect. Missouri has been actively working toward implementation of ITS and has a number of ITS projects in the wings and additional ITS projects specifically earmarked for commercial vehicle operations.

2.1 History of Missouri's CVO Activity

In 1993, the states of Missouri and Kansas participated in an Intelligent Transportation System institutional issues study to determine what state barriers existed between state agencies within its own state and between other states. This study looked at state and federal regulatory requirements and processes within each agency. From this review, Cambridge Systematics Inc. with WHM Transportation Engineering Inc., issued the "Kansas-Missouri ITS Institutional Issues Study," in December 1994. Missouri, unlike many other states, had very few institutional barriers. Regulatory agencies and the Highway Patrol have shared data for a great number of years for enforcement purposes. An area of regulation data not shared related to the oversize and overweight permits.

Missouri felt that an additional study was needed to determine a strategic direction for implementing electronic screening of commercial vehicles. The Iowa Transportation Center at Iowa State University was contracted to look at existing conditions, electronic screening architecture, and a comparison of alternatives for implementation and guidance for electronic screening implementation. This study considered commercial vehicles traveling on the Oklahoma and Kansas turnpikes because they often traveled in Missouri as well. This joint travel could possibly afford an opportunity by Missouri to bundle electronic screening with electronic toll collection. Missouri was looking for a

strategic direction that would minimize the financial investment and technical risk of implementing electronic screening.

In 1995, Missouri was invited to participate in an operational field test called the Midwest Electronic One Stop Shop Program (**MEOSS**). This program would test the feasibility of electronic data transmission to states from the motor carrier's place of business for compliance with the International Fuel Tax Agreement (**IFTA**), the International Registration Plan (**IRP**), the Single State Registration System (**SSRS**) and the oversize/overweight (**OS/OW**) permits. Software would be developed that would allow the state agencies and the motor carrier to electronically communicate with each other to request and receive motor carrier credentials.

In 1996, Missouri submitted an application for Commercial Vehicle Information Systems and Networks (**CVISN**) Model Deployment Program in Support of Intelligent Transportation Systems for Commercial Vehicle Operations. Within this application process, the state began formalizing its ITS/CVO program. Each state agency prepared a Business Plan with action items, estimated cost and proposed funding sources along with Goals and Objectives. **This was the first formal ITS/CVO Business Plan** for the state of Missouri. Although Missouri's application was considered one of the best, Missouri was not afforded federal funding at that time.

In 1997, the state of Missouri applied for additional funding through a mainstreaming program. Missouri was approved to become the Lead State in the FHWA Region 7 and 8 Mainstreaming initiative. In the role of Lead State, Missouri promotes FHWA's goal of nationwide deployment of ITS/CVO technology by the year 2005. Missouri would also lead a regional initiative to plan and prepare a regional business plan for ITS/CVO. It is the intent of this state to continue beyond this mainstreaming funding to promote and assist other states in implementation of ITS.

In addition, Missouri is closely monitoring other operational tests such as Advantage I-75, Oregon Greenlight, MAPS and the Commercial Vehicle Information Systems Network and commercial offerings such as Help, Inc., the Kansas Toll Pass and the Oklahoma Toll Pass Authorities.

2.2 Completed State ITS/CVO Projects

Safety Assurance:
Missouri has integrated safety strategies to target high-risk carriers. By decreasing the high-risk motor carriers, the safety of other commercial drivers and the general public should be greatly improved. The Commercial Vehicle Enforcement Section of the Highway Patrol has purchased a new SAFETYNET Local Area Network (**LAN**) system. Through the Motor Carrier Safety Assistance Program 100/200-site project, Missouri has upgraded all the interstate weigh station fixed sites with new desktop computers linked to the SAFETYNET LAN system. The LAN system enables the

inspectors at remote locations, through a WINDOWS application access to the following systems:

- **SAFETYNET**, an automated system that collects commercial inspection and crash data to determine motor carrier safety fitness.
  - **Micro Census**, a subsystem of SAFETYNET, this system is a database of Missouri carriers that gives the number of inspections, safety ratings and commodities transported. This database is updated weekly.
  - **Carrier search,** a subsystem of SAFETYNET, this system is a database of all Missouri interstate carriers. This database gives the legal name and address of the carrier, US DOT census number and the carriers' status.
- **Motor Carrier Regulation Information System** (**MCREGIS**), a computer program, furnished to enforcement agencies to access safety and hazardous material regulations.
- **Inspection Selection System** (**ISS**), a system that looks at interstate inspection database which is used as an indicator to determine if a carrier is to be inspected and why.
- The **Safety and Fitness Electronic Records System (SAFER)**, is a snapshot of carrier safety fitness and a data mailbox allowing enforcement personnel and motor carriers instant access to inspection fitness.

The state of Missouri has five agencies involved in the Motor Carrier Safety Assistance Program (**MCSAP**). Four of these agencies are participating in the driver/vehicle inspection program and are equipped with computers using the **ASPEN** inspection software and MCREGIS. The ASPEN software is used to upload inspection data to SAFETYNET. The Highway Patrol has 62 portable or pen-based computers and 27 personal computers with ASPEN inspection software. All 35 fixed inspection sites and 22 portable scales have computer equipment with ASPEN software. The Kansas City Police Department has 5 laptop computers and 1 personal computer and a MCSAP section under the St. Louis Police Department also has 5 laptop computers and 1 personal computer with ASPEN software. ASPEN software is also loaded on 25 laptops used by Motor Carrier and Railroad Safety. The pen-based computers used by the Highway Patrol are also loaded with the Inspection Selection System.

Inspections are downloaded on a daily basis to the SAFETYNET LAN server. The availability of safety information at roadside will support Missouri's safety strategy that will focus on high-risk carriers.

In addition, the Highway Patrol and Motor Carrier and Railroad Safety have developed and implemented a program to target high-risk intrastate motor carriers which mirrors the FHWA's **SAFESTAT** program. The state and federal SAFESTAT programs select carriers for compliance reviews based on high crash activity, high out-of-service vehicle violations and high out-of-service driver violations. Both of these programs are in their infant stage.

Missouri's system has been in existence since May 16, 1997. The Missouri Safestat program measures three Safety Evaluation Areas:

- crash data,
- driver inspection data, and
- vehicle inspection data.

Attached, as **Appendix A**, is the detail on how the crash data measurement in the first safety evaluation area is determined. The crash data omits carriers having no accidents.

Each of these three safety evaluation areas is weighted for an overall measurement to target certain motor carriers. The Missouri Safestat list is updated every six months. This system will be used in conjunction with electronic screening to help determine which vehicles will be required to stop at scale facilities for safety checks.

Missouri is also increasing the safety of commercial drivers by upgrading the weigh facilities. The state has built two new facilities on I-70 at Foristell, Missouri. These stations have longer ramps and weigh in motion on the off ramps. A larger and improved inspection facility was also built. The facility is hooked into fiber optics for quick access to data. The facility is equipped with computers using the ASPEN inspection software.

Credentials Administration:
This state is intent on changing current programs and services to improve procedures and systems for managing carrier rules and regulations. This intent on change can be seen by Missouri's participation in test programs for electronic receipt of data, multi-state permitting and the sharing of data between states.

Missouri is one of four states that participated in an operational test for the State On-line Enforcement Network (**STOLEN**) project. The staff at the Highway Reciprocity Commission began participation in STOLEN in July 1996. Missouri is now a fully participating state in this system. The stolen system is an online system through the NLETS network that allows commercial vehicle enforcement officers to readily check IFTA carriers from the four participating states to verify that these carriers are valid and not in a "revoked" status. It is hoped that other IFTA states will participate to further validate the use of this system.

Missouri participated in the Midwest Electronic One-Stop Shop pilot program. This program is in its final stages of evaluation. This pilot program did not evolve the way Missouri anticipated. Missouri participated fully in the pilot hoping that we could incorporate the resulting software into full implementation. The Single State Registration System section of this program worked well but the International Registration Program, the International Fuel Tax and the Oversize/Overweight parts of the program were seen to be too cumbersome and required more work than current systems in place. Carriers and state agencies did not see the resource benefits of using

the system as designed, incurring the cost of maintaining a dedicated phone line for transmission, etc. Therefore, the program in Missouri's eyes failed to produce the results it desired. Missouri is committed to continuing the concept of electronic filing and will continue to march down the road to this goal. Motor Carrier and Railroad Safety will continue to pursue electronic filing by bits and pieces implementing payment receipts electronically, filing insurance electronically and other methods of receiving data electronically. The state of Missouri is also interested in finding other software that will provide this type of credential application.

Electronic Screening:
This state is also committed to any program or services that will facilitate the verification of credentials and size and weight requirements at the roadside whether at fixed or portable weigh facilities. This commitment can be seen by the number of systems accessible by enforcement staff and the amount of equipment currently in place in this state.

Mo. Department of Transportation presently owns, operates and maintains 19 continuous vehicle count and classification Strategic Highway Research Program (**SHRP**) sites on highways in Missouri. Vehicles are counted and classified in all directions at these sites. Eleven of these sites utilize weigh-in-motion to determine axle and gross weights of vehicles classified as commercial. Continuous counts are used to obtain axle correction factors used in the design and re-design of the roadway. Axle weights are used in pavement design to determine equivalent 18,000-pound single axle loads. SHRP sites are computer controlled and download data to the Mo. Department of Transportation's Central Support Center daily through fiber optic cable or telephone lines. Monthly summary printouts from SHRP sites are used by Highway Patrol weigh station's Commercial Vehicle Enforcement supervisors to monitor time intervals of high motor carrier traffic volumes so manpower and hours of operation schedules can be adjusted to meet commercial vehicle peak volumes.

Other:
A number of other activities shows Missouri's commitment to the industry and its leadership role in commercial vehicle operations. Missouri is an active member of the National Conference of State Transportation Specialists (**NCSTS**). Missouri's activities at NCSTS include taking a leadership role in a subcommittee providing comments and suggestions to the FHWA in relationship to the requirements of the Interstate Commerce Commission Transfer Act (**ICCTA**) of 1995. ICCTA proposes to replace the SSRS program, the DOT identification number system, the current interstate registration system, and the financial responsibility information system with a single, on-line federal system. Missouri is also a member of the American Association of Motor Vehicle Administrators (**AAMVA**) and the American Association of State Highway and Transportation Officials (**AASHTO**).

Industry also plays an important part in commercial vehicle operations programs both nationally and at the state level. In cooperation with the Mo. Department of Transportation, Digital Teleport, Inc., a private company, will install 1700 hundred

Figure 2.2 Summary of Completed State ITS/CVO Projects

		Elements of	CVISN Deployment	
	SAFETY INFORMATION EXCHANGE	CREDENTIALS ADMINISTRATION	ELECTRONIC SCREENING	OTHER
ASPEN software installed at all major inspection sites	√			
Access to SafetyNet System at all major inspection sites	√			
Access to Safer	√			
Safestat Program developed to be used in conjunction with Electronic Screening	√			
Participated in operational test for Stolen		√		
Participated in MEOSS Pilot Program		√		
19 Continuous SHRP sites			√	

miles of fiber optic cable in the highway rights of way throughout the state by the fall of 1998. The entire communications infrastructure will link the Highway Patrol's mainframe computer to the fixed weigh stations, rest areas and SHRP sites. The fiber optic network will provide the avenue required to process data transmission at the speeds necessary for electronic clearance of commercial vehicles traveling at mainline highway speeds, to provide assistance at rest areas and to provide weather and traffic information.

A summary of completed state ITS/CVO projects is shown in Figure 2.2 and how those completed projects relate to the elements of CVISN Deployment. This figure will show that a lot of the commercial vehicle operation activity in Missouri has been in the area of safety information exchange and credential administration with little in the area of electronic screening.

2.3 Outreach Programs

All Missouri agencies that participate in the ITS/CVO have in the past and continue to be actively involved in the outreach process. Yearly, these agencies either collectively or individually attend seminars to provide regulatory information to a variety of commercial carriers and/or association that are involved in the transportation of goods and services in and through the state. These outreach programs include but are not limited to: Fairs and Festivals Associations; Mo. Dump Truck Association; Land Improvement Contractors Association; Missouri Motor Carriers Association Information Seminars; Safety Seminars and Safety Council meetings; Missouri Truck Driver Championship; Liquefied Petroleum Gas Association; Petroleum Marketers Association; IRP and IFTA annual meetings and quarterly Highway Reciprocity meetings.

The state has focused one area of its outreach program in key Missouri cities over the past several years for Consortia/Third Part Administrators for compliance with federal law for Drug and Alcohol Testing. Missouri has also focused outreach efforts to selected motor carriers for a total overview of the federal rules and regulations.

With Missouri participating in the Midwest Electronic One Stop Shop project, the state sought out carriers that would be interested in the operational test of the software package. Four carriers were brought on board as participants: Terminal Consolidation, United Van Lines, Opie's Transport, Inc. and Contract Freighters, Inc. These companies will be advised and involved with the progress of ITS/CVO activities as we continue to implement additional projects.

Two organizations that we are fortunate to be involved with are the Joplin and Springfield Diplomat Club. This group of commercial carriers meets monthly in the southwest corner of the state inviting speakers to address concerns from the carrier perspective and for informational purposes. This format will be used to address the

expectations and enhance awareness of ITS/CVO applications. Missouri has been extremely fortunate in the support that Contract Freighters, Inc. has provided in the past. We will continue to rely on carriers such as this as a path for support and to assist the state in providing outreach to other carriers.

3.0 Overview of the Business Planning Process

The business planning process described below will cover how the standing committee was formed, a description of the committee members, how committee meetings are conducted and how Missouri developed its commercial vehicle operations' business plan.

3.1 Evolution of Missouri's ITS/CVO Standing Committee

During the time of the institutional studies and Missouri's beginning participation in the Midwest Electronic One-Stop Shop Program, members of each Missouri State agency involved in motor carrier regulation and enforcement as well as representatives from the motor carrier association and the regional Federal Highway Administration began regularly meeting and planning commercial vehicle operation activities. This group decided to formalize its on-going activity into an ITS/CVO Standing Committee.

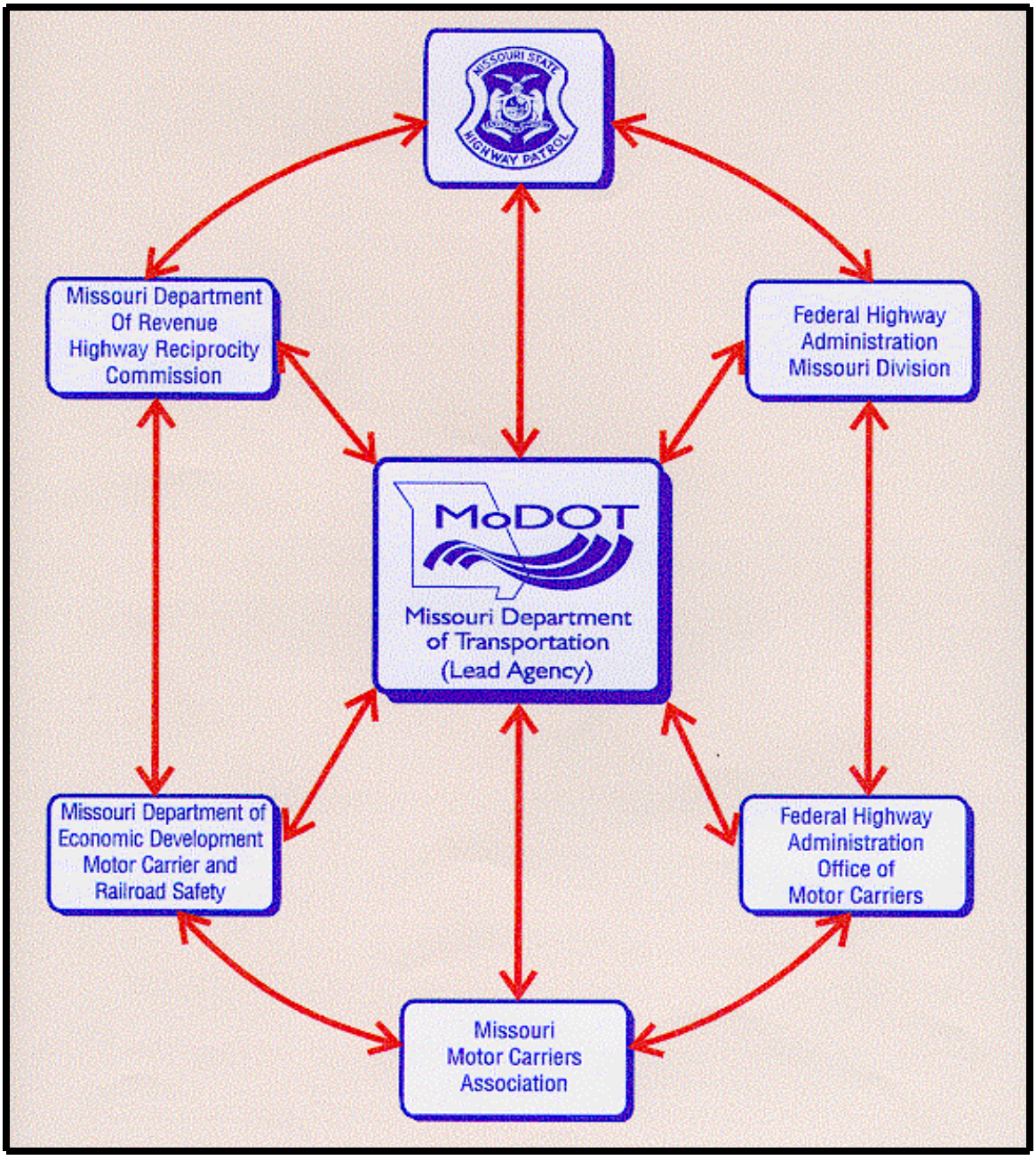
The Mo. Department of Transportation became the lead agency in coordinating the intelligent transportation system program of motor carrier operations primarily because of other ITS programs being developed and implemented by this agency for areas not covered by commercial vehicle operations.

The standing committee has ten members in total. Six of these members consist of one designated representative from four state agencies, a representative from the Missouri Motor Carrier Association and a representative from the Missouri Division, Office of Motor Carriers, Federal Highway Administration. In addition, four project managers are also designated from state agencies to manage ITS/CVO projects. Missouri believes that it is quite unique in its ability to work with industry and the federal government. It is also blessed with great cooperation from the industry and with members of Federal Highway Administration. This committee receives active participation from both industry and FHWA at the state level. The working relationship between these partners in ITS/CVO activities can been seen in **Figure 3.1.**

Four information technology employees, one from each state agency, support this committee as non-members. These individuals provide technological computer assistance for current systems, design of new systems, hardware and other areas.

If any member of the committee leaves state, federal or industry service, a replacement member is designated for this committee. No service time limitation is placed on any member of this committee. No special funding is provided to any member for service on this committee.

Figure 3.1 Agency Relationship Supporting Commercial Vehicle Operation Services



The committee members and technical support are as follows:

ITS/CVO Standing Committee Members:

Mr. Bill Wilson, Administrator, Motor Carrier Services, Missouri Department of Transportation
Captain Dwight Hartung, Director, Commercial Vehicle Enforcement Division, Missouri State Highway Patrol
Mr. Rodney Massman, Acting Executive Director, Missouri Department of Revenue, Highway Reciprocity Commission
Mr. Ben Goodin, Transportation Enforcement Program Administrator, Missouri Department of Economic Development, Division of Motor Carrier and Railroad Safety
Mr. Joseph Boyd, State Director, Office of Motor Carriers, Federal Highway Administration
Mr. Chris Burruss, Vice-President, Missouri Motor Carriers Association

Project Managers:

Mr. Bill Stone, Project Development Engineer, Missouri Department of Transportation
Mr. Gary Steinmetz, Assistant Director, Commercial Vehicle Enforcement, Missouri State Highway Patrol
Ms. Barbara Hague, Transportation Compliance and Audit Program Administrator, Missouri Department of Economic Development, Division of Motor Carrier and Railroad Safety
Mr. Darrell Maples, Computer Information Specialist, Missouri Department of Revenue, Highway Reciprocity Commission

Information Technology Support:

Mr. Bob McFadden, Systems Manager, Missouri Department of Transportation
Ms. Ruth Niblack, Program Analyst Supervisor, Missouri State Highway Patrol
Mr. Bob Ortbals, Senior Regional Programmer, Missouri Department of Economic Development
Mr. Darrell Maples, Computer Information Specialist, Missouri Department of Revenue, Highway Reciprocity Commission

ITS/CVO Standing Committee Meetings:
Standing committee meetings are held at Mo. Department of Transportation at least once each quarter. An additional meeting is held each year in conjunction with FHWA's ITS Coordination Team meeting. In addition to the standing committee meetings, quarterly regional meetings are held with the states of South Dakota, Kansas and Nebraska in respect to the Midwest Regional Mainstreaming project with the state of Missouri as the Lead State.

Meetings of the standing committee are held informally with a majority consensus of the committee being reached on all issues. The standing committee and the project managers all have voting powers. Individuals or small working groups are often designated by the standing committee to work on specific projects. Drafted projects are reviewed, approved, disapproved or revised by the full committee.

Recommendations of the standing committee are taken to the agency's directors and/or department heads before any contract or commitment is made on behalf of a state agency. Any contracts or agreements are formally approved and signed by the lead agency.

3.2 Development of the Business Plan

The original business plan was prepared in conjunctions with Missouri's application for CVISN Model Deployment Program in July 1996. This business plan was originally prepared with the input from the standing committee and formalized by the Center for Transportation Research and Education (**CTRE**) under specific contract to prepare the application. Two formal meetings were held with CTRE in discussing Missouri's preparation of the business plan. Various assignments were given to each agency in data and information to be forwarded to CTRE. A draft plan and application was presented to the committee who reviewed the plan and finalized the application for presentation to FHWA for CVISN funding.

This committee used the application for funding and the business plan presented in that application as a basis for the business plan in this document. The business plan has been revised and updated in accordance with new projects and in accordance to guidelines presented for completion of a state business plan. One of the main differences between the original business plan and the plan presented here is the format layout, consolidation of goals and objectives of each agency into a central focus, detail on the evolution of the standing committee and additions and adjustment to future CVO projects. The project managers prepared the revised business plan and have presented the plan to the full committee for review. The standing committee has approved the revision.

4.0 Current CVO Environment

In reviewing this business plan, it is important to look at the various state agencies, their functions and responsibilities and how the enforcement process works within this state as it deals with commercial vehicle operations.

4.1 Description of Regulatory Committee Participants and State Responsibilities

The primary responsibility for motor carrier regulation, credentialing and enforcement is shared by five agencies in the state of Missouri. These agencies operate in different departments with differing overall goals and responsibilities. **Figure 4.1** is a summary table of the various agencies listed below and a list of the enforcement or compliance activity.

Department of Transportation

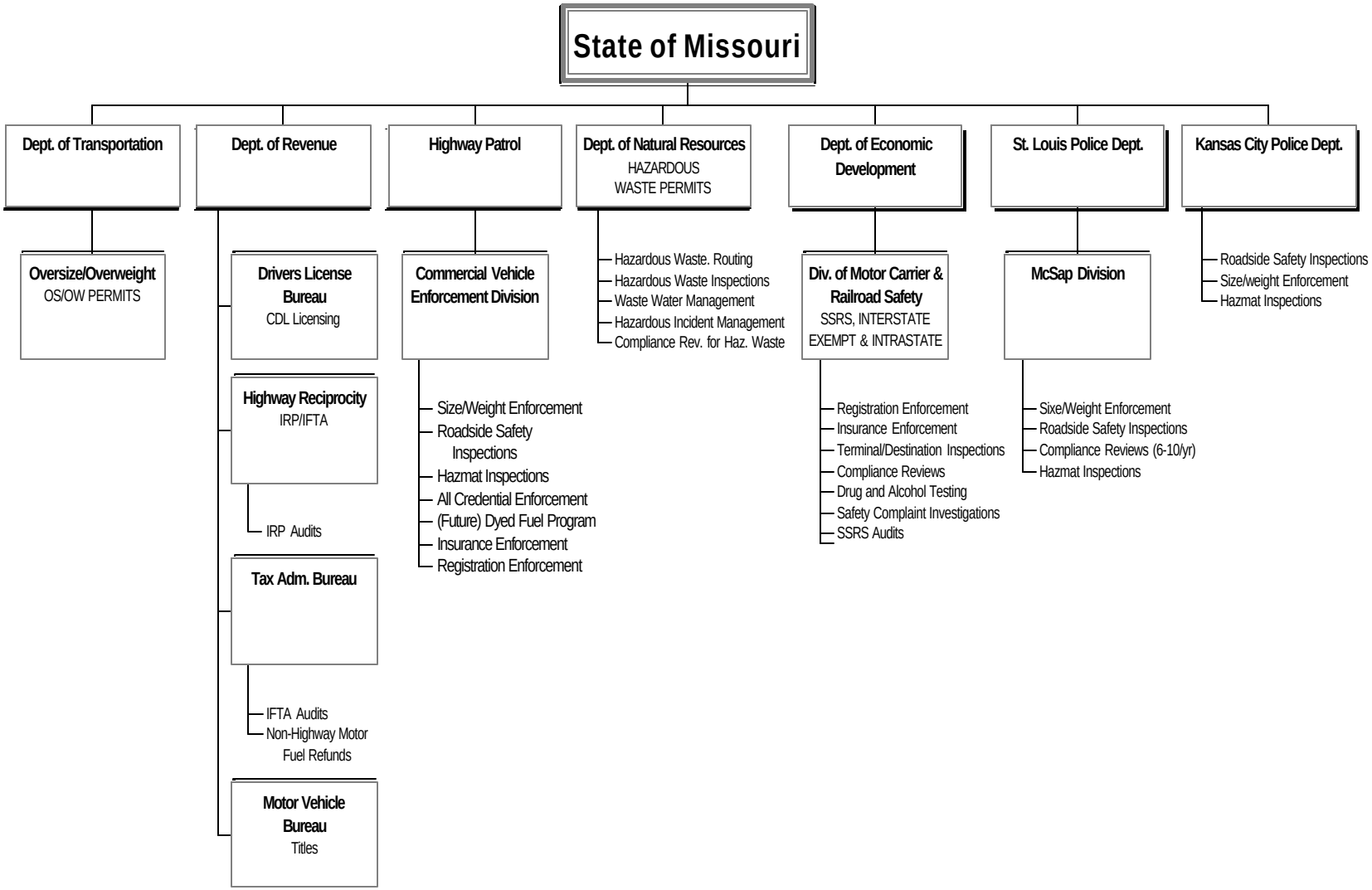
The Missouri Department of Transportation operates under a decentralized organization of 10 geographical districts with a support center in Jefferson City. The support center provides two main functions: 1) policy development and 2) quality assurance. The Highway and Transportation Commission is the governing body of the department and is composed of six appointed members with staggered terms of six years each. No more than three commissioners may be of the same political party. The commission appoints the chief engineer, chief counsel and secretary.

OS/OW Section - The Department of Transportation is responsible for management of the oversize/overweight (OS/OW) permits program in the state of Missouri. The maximum legal width, length and weight without a permit varies according to the type of vehicle and/or highways traveled. Carriers wishing to operate a vehicle that exceeds Missouri dimensional or weight limits must obtain an OS/OW permit for that vehicle. Carriers moving loads exceeding 132,000 pounds gross vehicle weight may be subject to bridge stress studies, which are conducted by the Mo. Department of Transportation.

Missouri's Motor Carrier Services Unit of the Department of Transportation's Support Center is located in Jefferson City. This center issued 145,546 permits in 1996 and 152,380 permits in 1997. This amounted to a 4.7% increase of 6,831 permits. It is anticipated that 159,000 permits will be issued in 1998.

The permit system is designed to enter information from telephone applications on various screens and to ultimately issue a permit that is uniform statewide. The system automatically removes the proper permit fee from escrow accounts previously set up by

Figure 4.1 Summary Table of Agencies Responsibilities for CVO



motor carriers; issues a permit number; and automatically faxes the permit to pre-determined destinations, i.e., truck stops, loading areas, field offices, etc. There are approximately 1,200 active escrow accounts for trucking companies and permit services. Electronic application is also available for customers with escrow accounts by means of a modem and personal computer through toll-free phone lines. These applications are then evaluated by support center agents and approved or disapproved accordingly. The electronic application process is designed to replace the telephone application and the electronic process is offered as an alternative. The permit application evaluation process is primarily manual in that roadway and structure analysis is reviewed for each application by researching information such as bridge weight capacities, vertical and horizontal clearance measurements and traffic volume on county and state maps. The oversize and overweight temporary movement restrictions created by emergency conditions or highway construction are consulted through a separate electronic system that has been set up on a computer program.

Department of Revenue

The Missouri Department of Revenue oversees several motor carrier functions including vehicle titling and registration; motor fuel taxes; commercial drivers licensing and the issuance of temporary operating permits. In conjunction with these functions, this agency is responsible for accepting and reviewing applications; issuing credentials to approved carriers, auditing IRP/IFTA records and other tax information, and collecting taxes and fees when required.

Commercial Driver License – The Missouri Department of Revenue, Drivers License Bureau, is responsible for issuing commercial driver licenses (**CDL**) under the National Commercial Driver License Program. A CDL is required for anyone driving a vehicle weighing or registered for 26,001 or more pounds, transporting hazardous materials or carrying 16 or more people, inclusive of the driver. There are three classes of commercial driver licenses: Class A, Class B and Class C. Drivers are required to pass appropriate written and skills tests. The skills test must be taken in a vehicle representative of the type operated or expected to operate. Additional written tests or endorsements are required to operate double/triple trailers, buses, tankers, vehicles equipped with airbrakes and vehicles carrying hazardous materials. The tests are conducted by the Highway Patrol in various areas around the state.

International Registration Plan - Licensing of interstate commercial motor vehicles is under the Highway Reciprocity Commission. This commission oversees the International Fuel Tax Agreement and the International Registration Plan. This commission is composed of the Governor, Attorney General, Director of Revenue, Director of the Division of Motor Carrier and Railroad Safety, Superintendent of the State Highway Patrol and Chief Engineer of the Department of Transportation. The Commission appoints the Director of the Department. The state of Missouri is a

member of the International Registration Plan (**IRP**). The IRP is a base state program for issuing apportioned registration for interstate carriers. The base state collects and distributes registration fees dependent on the states and number of miles traveled subject to audit by the state.

The Highway Reciprocity Commission processed IRP applications for approximately 5,500 carriers and 60,000 vehicles in 1997. These applications are processed daily, online in a real-time environment on the Missouri State Data Center's mainframe computer. The software is developed, maintained and enhanced in-house by Highway Reciprocity data processing staff. Data is keyed into the IRP system and credentials in the form of cab cards are printed on-site and issued immediately. The cab cards are then given to walk-in customers at time of payment or mailed to the carrier. Staff developed a stand-alone program that executes on a personal computer. This program contains all the IRP forms. Carriers are given this program free of charge as requested.

International Fuel Tax Agreement- Highway Reciprocity also administers the base state International Fuel Tax Agreement (**IFTA**). The IFTA is a plan similar to IRP in which the carrier qualifies in the base jurisdiction for fuel tax licensing. The motor carrier files quarterly reports of mileage and fuel paid in all jurisdictions in the base jurisdiction for fuel tax reporting. A Missouri-based interstate carrier who operates a 26,000 pound vehicle which uses diesel, propane, natural or compressed gas, gasoline or gasohol is normally licensed under IFTA. The IFTA license is valid for a calendar year. Two decals, at a no fee charge, are issued to the carrier to be placed on each exterior portion of the cab's doors.

The Highway Reciprocity Commission processed IFTA applications for approximately 5,800 carriers and issued 83,000 sets of IFTA decals in 1997. Application and tax return data is manually entered and processed daily on the Missouri State Data Center's mainframe computer. The IFTA license is printed on-site and issued immediately. The IFTA licenses and stickers are then given to walk-in customers or mailed to the carrier.

Trip Permits - Temporary permits in lieu of registration or fuel tax requirements may be purchased from the Commission, from permit services or at weigh stations. These permits are valid for 72 hours. Missouri is also able to issue trip permits for 10 other states as well.

State Highway Patrol

Roadside Enforcement - The Highway Patrol through the Commercial Vehicle Enforcement Unit enforces the credentials issued by the agencies listed above and operates all fixed and mobile enforcement weight and inspection facilities. Missouri has 35 stations at interstate and primary road sites and 22 portable units. The Highway Patrol has 173 Commercial Vehicle Enforcement Personnel trained in all aspects of commercial vehicle regulations.

This agency enforces size and weight requirements; IRP, IFTA, SSRS, Intrastate, Interstate Exempt and Oversize/Overdimension permits; all roadside safety and hazardous materials inspections; insurance and registration enforcement. Temporary interstate exempt, IRP and IFTA credentials may be purchased at any weigh facility in the state if the motor carrier does not cross the scales and walks in to purchase the necessary credentials. In the near future, this agency will also administer the dyed fuel program currently administered by the Internal Revenue Service. The dyed fuel program is a testing program designed to determine if fuel, intended for off-road use, is being used in motor vehicle activity over the road.

The mission of the Commercial Vehicle Enforcement Division is the enforcement of state and federal regulations insuring the safe and legal operations of both interstate and intrastate commercial vehicles into and through the state of Missouri.

Department of Natural Resources

The Department of Natural Resources is made up of five divisions: Division of Energy, Division of Environment Quality, Division of Geology and Land Survey, Division of Administrative Support and Division of State Parks. The Division of Environmental Quality is responsible for administering the solid and hazardous waste management program.

Hazardous Waste Management - The Missouri Department of Natural Resources regulates the registration, filing of financial responsibility and routing of the transportation of hazardous waste. The hazardous waste program protects public health and the environment. The hazardous waste program reviews applications for permits for facilities that treat, store and dispose of hazardous waste to ensure that these facilities conform to environmental laws and regulations. This program also licenses hazardous waste transporters that meet state requirements. Transporters moving hazardous waste into, out of or through the state must be licensed by this agency. These licenses are issued for a one-year period. No temporary licenses are issued. The license fee is determined according to the gross vehicle weight and the number of vehicles in the fleet. Hazardous waste transporters are required to file proof of insurance and if a corporation, certificate of corporate good standing. The driver of the vehicle must carry a manifest and a Missouri Hazardous Waste Transporter License Certificate.

Department of Economic Development

The Missouri Department of Economic Development executes statutory requirements and department policy in the areas of economic development, regulation of business and financial institutions and professional registration. Various regulatory agencies fall under this department including the Division of Motor Carrier and Railroad Safety. The

following outcomes of the Division of Motor Carrier and Railroad Safety for funding decisions are to:

- decrease the number of crashes on Missouri highways involving commercial motor vehicles regulated and reviewed by the division,
- decrease the number of complaints for service by regulated household goods and passenger carriers,
- minimize the number of uninsured, registered motor carriers on Missouri highways, and
- decrease the cost to comply with division SSRS process.

Operating Authority - The Division of Motor Carrier and Railroad Safety is responsible for regulating common and contract motor carriers transporting property (including hazardous materials) and passengers in the state of Missouri. Motor carriers that fall into one of these categories and conduct intrastate or interstate operations must show that they are financially responsible (proof of insurance) and obtain operating authority from this agency. In addition, motor carriers applying to operate within the state must comply with the federal regulations as it relates to safety. Operating authority may be granted to motor carriers who are registered with the FHWA, as well as to FHWA-exempt carriers.

Motor Carrier and Railroad Safety is responsible for administering the Single State Registration Program **(SSRS**). The audit section is responsible for auditing approximately 2,400 SSRS motor carriers based or who have chosen Missouri as it base state. A majority of the SSRS applications are received by mail. The information is entered into a mainframe system and the credential is downloaded for printing the next working day. If a credential is needed quickly, the information is entered into a personal computer and processed within 5 minutes. In many instances, the SSRS credential is faxed to the motor carrier. A new interstate registrant may have his application processed and credential issued within an hour and a half.

This agency participated in the Midwest Electronic One-Stop Shop program. This test program seemed to work well for the SSRS system but failed in other aspects of the program. This software is not being used at this time.

The audits performed by staff of this agency verify that the motor carrier has paid its proper fees dependent upon the motor carriers operations. For the 1997 state fiscal year, 596 SSRS audits were performed. During this same fiscal year, the amount of monies collected for under-reporting of SSRS fees amounted to $163,050.

Motor carriers desiring to operate in intrastate commerce are required to show that they are financially responsible (file proof of insurance) and that they are in compliance with federal safety requirements. Household good and passenger carriers are regulated at a more stringent level.

Enforcement - The enforcement section within this agency is responsible for enforcing the state rules and regulations and the Federal Motor Carrier Safety Regulations. This section performs terminal safety compliance reviews, investigates complaints and provides educational assistance to carriers. This agency enforces safety requirements at motor carrier terminals under the Motor Carrier Safety Assistance program. The federal safety regulations have been adopted by the state of Missouri.

Complaints are filed with this agency if a carrier fails to comply with state requirements. Fines of up to $2,000 per day per violation may be accessed for non-compliance. In the calendar year1997, 611 compliance reviews were performed, 506 compliance reviews had violations and 43 cases were filed.

Saint Louis and Kansas City Police Department

Missouri is unique in its make up and involvement with the local police departments of two of its largest metropolitan areas. Both of these departments enforce size and weight requirements and perform roadside safety and hazardous materials inspections. St. Louis Police Department also performs a few compliance reviews.

4.2 Description of Missouri Enforcement's Process

Presently all commercial vehicles registered for more than 12,000 pounds are required to stop at all weigh stations. Once a commercial vehicle enters the weigh station, the vehicle continues to the static scale. The commercial vehicle is then weighed as enforcement personnel visually examine the vehicle, looking for any obvious mechanical defects or violations, which would require closer scrutiny of the vehicle or driver. If it is determined no further attention is required the driver is allowed to proceed. If additional attention or a more thorough examination is necessary the driver is instructed to park the vehicle and bring in all available driver and vehicle credentials and shipping documents. During this subsequent examination the driver's CDL, medical certificate, registration, IRP and IFTA credentials, Single State Registration, OS/OW permits if applicable, and insurance requirements are checked to determine compliance.

The Missouri Uniform Law Enforcement System (**MULES**) who interacts with the National Law Enforcement Telecommunication System (**NLETS**) allows enforcement personnel to determine the validity of a CDL for a Missouri resident or non-resident. All interstate weigh stations are equipped with computer terminals that can access MULES and NLETS. Through MULES, the Patrol's mainframe computer accesses the records of Missouri Department of Revenue's Driver Records, IFTA and IRP credentials from the Highway Reciprocity Commission, as well as motor carrier files on safety records and financial responsibility at the Missouri Division of Motor Carrier and Railroad Safety.

The vehicle registration is also checked to determine ownership and validity. The driver's record of duty status is examined to determine compliance with hours of service regulations. After examination of driver and carrier credentials the enforcement personnel decide whether to conduct the North American Standard Level I, II, or III inspection. Any request for information relative to oversize/overdimension permits must be directed to the Special Permit Office of the MoDOT via telephone during normal business hours Monday through Friday. Enforcement personnel are authorized to issue Uniform Complaint and Summons for any commercial vehicle violation of state laws, federal motor carrier safety regulations and hazardous materials requirements. Completed inspection reports are manually or electronically forwarded to the Commercial Vehicle Enforcement Division of the Highway Patrol, for entry into SAFETYNET, the FHWA's automated information system for managing safety data.

Manually initiated computer inquiries are presently being conducted at all interstate weigh stations and at most weigh stations on the primary system. These computer checks are conducted to insure that carriers are in compliance with state and federal regulations and that all revenues due the state have been paid. Interstate weigh stations on the average make up to 35,000 computer inquiries per month. During the calendar year 1996, there were 2,934,016 computer inquiries into the MULES system checking the validity or status of driver/vehicle licenses and authority to operate through Missouri.

Missouri has an ongoing problem of commercial vehicles by-passing the fixed weigh stations by traveling the secondary highway system in order to escape compliance checks. The main objective of portable units is to monitor commercial vehicle traffic on the secondary and supplementary highway systems. Portable unit teams patrol assigned areas looking for vehicles operating in violation of the state's size and weight laws, registration and fuel tax requirements and commercial vehicles operating in violation of motor carrier regulations. When a vehicle is selected for examination it is imperative that a safe location be found where enforcement personnel can conduct an inspection of the driver/vehicle. Once the vehicle is stopped, the shipping documents are examined and a determination is made to weigh the vehicle using portable wheel load weighers. The enforcement personnel visually examine the vehicle looking for any obvious mechanical defects or violations, which would require closer scrutiny of the vehicle or driver. If enforcement personnel decide no further attention is required, the driver is allowed to proceed. If enforcement personnel decide that additional attention or a more thorough examination is necessary, the driver is instructed to produce all credentials. Computer inquiries are requested by radio transmission to the district Troop Headquarters or fixed weigh station. The enforcement officer can check all credentials on the road that can be checked at the fixed weigh stations. Communication Officers initiate the computer inquiry into the MULES network advising the portable unit team of the outcome of the request.

The Division of Motor Carrier and Railroad Safety has for a number of years shared enforcement of motor carrier compliance of maintaining proof of insurance with the Highway Patrol. Financial responsibility information can be accessed and monitored at the weigh stations. The Division of Motor Carrier and Railroad Safety began its simplification of interstate motor carrier registration process eight years ago by executing an agreement with seven states to identify interstate motor carriers in a test base state registration program. The intent of this program was to simplify the identification process of interstate carriers for the purpose of verifying whether motor carriers filed and maintained proper insurance. Three years ago, this concept was federally mandated and the Single State Registration System (**SSRS**) was initiated along guidelines similar to the test program. New legislation has been passed that will in two years integrate the SSRS state program into a single federal on-line system. It is anticipated that this single system will be implemented at the state level and could identify the motor carrier, issue safety census numbers, collect insurance compliance electronically as well as manually, and share this information with federal and other state agencies.

The Highway Patrol also enforces the issuance of oversize/overweight permit issued by the Mo. Department of Transportation. These permits limit the motor carrier to specific routes within specific timeframes.

4.3 Private and Industry Participation

All of the Missouri agencies involved with CVO enforcement and credentialing enjoy a very close working relationship with the Missouri Motor Carriers Association (**MMCA**). Numerous meetings are held with industry representatives and with state staff. MMCA is an ex-officio non-voting member of the Highway Reciprocity Commission. The Commission is comprised of the Governor, Attorney General, Director of Revenue, Chief Engineer of the MoDOT, Superintendent of the MSHP and Director of the Missouri Division of MCRS.

The state also enjoys a good relationship with the DumpTruck Association and the Owner Operators association. The state also has a good relationship with the carrier's themselves as well as numerous permit companies who act on the motor carrier's behalf.

The motor carrier and related industries of the state of Missouri strongly support the objectives of the Mainstreaming and CVISN programs. This was demonstrated by the number of carriers that participated in the MEOSS project and carriers that continue to show interest in the electronic screening project for the southwest weigh station. Missouri also has an excellent working relationship with a large-scale manufacturer located in Missouri, who has expressed interest in partnering with the state for Project 5 of this plan. This relationship between carriers and industry continue to be an example of Missouri's commitment to the ITS/CVO process.

Missouri has a history of partnerships between private entities in the ITS/CVO arena. A Missouri company played an integral part in providing some weigh in motion equipment for testing. Another company has been provided highway right-of-way rights in exchange for state use of a fiber optics system being installed next to the major interstate system. Missouri is also discussing another possible partnership in conjunction with the installation of a mainline verification system for commercial motor carrier operations.

This strong commitment by private and motor carrier industry indicates their interest in these types of projects and their ability to work with the state of Missouri in these efforts.

5.0 Strategic Direction for ITS/CVO Activities

Nationally, the intelligent transportation system is guided by four principles: 1) promotion of a national coordinated transportation system; 2) support research and technology transfer; 3) ensure ITS technologies are safe and cost efficient; and 4) create a new industry. Commercial vehicle operation is only one aspect of this overall system. This is true as well in Missouri. This section of the business plan will detail this state's mission statement, its goal and objectives as they relate to commercial vehicle operation.

5.1 Mission Statement

The mission of the ITS/CVO program in Missouri is as follows:

Create an environment that promotes a safe and efficient motor carrier system.

5.2 Goals and Objectives

Missouri's vision is the full implementation of the commercial vehicle operations program that will allow law compliant commercial vehicles to travel safely and unencumbered in and through the state and provide maximum safety for the motoring public. The ITS/CVO program in Missouri is **a partnership** between industry and government. The programs presented in this business plan are centered on the need for industry to operate without high costs of compliance and that participation is voluntary. Each of the projects listed within the plan must provide benefits to the industry and the state in order to be considered.

The goals and objectives of our ITS/CVO program are:

Goal 1. Ensure the safe and legal operation of both interstate and intrastate commercial vehicles operating within and through the state of Missouri.

Objectives:

a) Decrease the number of legal commercial vehicles required to exit the highway system at fixed weigh stations by 5% by the year 2000.
b) Develop and fully implement a system to target interstate and intrastate carriers with high crash rates and high driver and vehicle out of service rates by the end of the state fiscal year 1999.

c) Improve motoring public safety in and around weigh stations by upgrading 30% of the fixed weigh stations by the year 2005.

Goal 2. **Improve the effectiveness of roadside program.**

Objectives:

a) Focus enforcement efforts on carriers with high crash rates and high driver and vehicle out of service rates by focusing 10% of current inspections and compliance reviews on problem carriers in these areas.
b) Develop and deploy electronic screening of commercial vehicles at mainline speeds at one location by 1998 and five locations by the end of the year 2000.
c) Target enforcement efforts on motor carriers that do not stay in compliance with financial responsibility requirements. Currently 8% of the motor carrier industry operating in Missouri are out of compliance with financial responsibility. Within the next three years, it is intended to reduce this amount by 5%.
d) Insure compliance with state's fuel tax reporting, credential requirements and oversize/overweight regulations by increasing the number of vehicles checked for these credentials by 5% in state fiscal year 1999 and by an additional 10% in fiscal year 2000.

Goal 3. **Improve the effectiveness of the deskside program.**

Objectives:

a) Improve the timeliness and accuracy of information supplied to the roadside whether online or upon request to support the selection of targeted carriers and enforcement decisions by 30% by the end of the year 1999.
b) Develop and enhance interoperability of data systems by the year 2001.
c) Identify, analyze, and evaluate the benefits and impact of an electronic method of obtaining and processing registration credentials and implement electronic exchange of credential information by the year 2000.
d) Use enhanced technologies and information systems to help exchange data electronically with industry, member jurisdictions, and other related organizations and to ensure CVISN capability. Intend to have 15% of the motor carrier industry exchanging data electronically by the year 2001.
e) Interface electronically with the IRP and IFTA Clearinghouses by the state fiscal year 2000.

Goal 4. Administer and enforce the laws relating to all commercial motor vehicle registration with efficiency and fairness.

Objectives:

a) Streamline operation to process registration renewals and supplemental applications for commercial vehicles. Establish a base line for improvement by the end of 1999.
b) Use enhanced technologies and information systems to help exchange data electronically with industry, member jurisdictions and other related organizations.
c) Continue to improve customer relations by keeping up-to-date on all requirements and regulations with member jurisdictions and government agencies by decreasing the regulatory cost of compliance.
d) Be more flexible and responsive to customer needs.
e) Continue to nurture public relations by improving customer service levels through the use of electronic communication between state agencies, FHWA and the motor carrier industry.
f) Work toward total electronic registration and eliminate unnecessary vehicle credentials by the fiscal year 2005.

Goal 5. Create projects that are consistent and compatible with the CVISN architecture and the deployment of CVISN.

Objectives:

a) Implement operational concepts and recommended practices expressed in the National Architecture and CVISN Architecture.
b) Seventy-five percent of all inspection data will be generated electronically using ASPEN and the ISS system by September 1998.
c) Use of standard data definitions to facilitate the exchange of safety and credentials information between states.
d) Interface with the IRP and IFTA clearinghouses by the end of the year 2000.
e) Interoperability of state system.

5.3 Leadership Role

Missouri intends to continue its leadership role in ITS/CVO programs. Currently, Missouri is the Lead State in a mainstreaming project for the state of Nebraska, Kansas and South Dakota. Missouri has actively pursued additional states to join the mainstreaming initiative. Presently, Arkansas has verbally committed to join the regional consortia. The states of Iowa and Oklahoma have attended several of the regional meetings and we believe that it is a matter of time before these states join in the regional consortia as well.

Missouri will assist other states as our CVO projects develop and solicit information from other states that will assist this state in its own CVO plan. Other states can also use Missouri's unique relationship between state and federal agencies, motor carriers and private industries as a model to develop state CVO plans.

6.0 CVO Business Plan

Missouri's first state business plan was prepared and presented in the state's application for Model Deployment of the Commercial Vehicle Information Systems and Network program in July 1996. The purpose of the first business plan was to help guide Missouri to begin deployment of commercial vehicle operations toward ensuring safe and efficient commercial vehicle operations within the state and nationwide. The plan presented here is the ITS/CVO Standing Committee's first formalized revision to that plan. These revisions consist of updating projects started, detailing new projects and new estimates of cost to implement all plans. This business plan will be formally evaluated every two years and necessary changes made accordingly. Informally, changes to this business plan will be made annually. Future changes to this plan will be made and approved by the standing committee. The committee will continually monitor all activities within this plan by a status report at each of its standing committee meetings.

The availability of funding plays into the timing of each project within this plan. The projects listed in this plan are prioritized by the initial or proposed start dates. Additional projects in the area of updating existing and upgrading weigh facilities are in state department business plans but implementation of these projects are based upon the availability of funding and priority of Mo. Department of Transportation. These projects will not be listed in this business plan. This plan can be viewed on the Midwest ITS/CVO Mainstreaming Web page with other regional business plans as well as other ITS/CVO activities at http://www.ctre.iastate.edu/midwest/.

6.1 CVO Business Plan Structure

Information systems and communications networks within this business plan will be deployed within three elements:

- Safety Information Exchange;
- Credentials Administration; and
- Electronic Screening.

Safety Information Exchange element will reference programs that are designed to assure commercial vehicle safety and the exchange of safety information between the states. Credential Administration element will reference programs that are designed to improved systems and procedures of motor carrier regulations. Electronic screening element will reference programs designed to improve vehicle and credential verification and screening. Safety Information Exchange and Credentials Administration systems will be deployed within this plan at deskside. Electronic screening system will be deployed at roadside.

Missouri has within this business plan projects to be implemented at deskside and roadside that will allow this state to **draw closer** to full CVISN implementation. Each of the projects will reference what activity and objectives are being addressed. Some long term capital improvements and new installations are not included in this plan. Even though these projects are set as department goals, these projects depend on funding and priority within the Department of Transportation. Only those projects, which are assured implementation, are included in this plan along with the installation and yearly operating costs.

This plan is not intended to be a proposal for full CVISN implementation nor does it reflect proposals for CVISN projects. It is a snapshot of current activities and projects to be completed within this state to begin a pilot roadside verification system and to continue deskside activities with current funding limitations. More ambitious plans could be addressed and this business plan modified if Missouri becomes a CVISN pilot state. Missouri plans to submit a request in the future to become a CVISN pilot state to work toward full implementation.

ALL PROJECTS WITHIN THIS PLAN ARE INTENDED TO BE FULLY COMPATIBLE WITH THE CVISN ARCHITECTURE.

Missouri's commercial vehicle operations projects fall within two distinct categories: deskside and roadside. All activities within these categories are to be interoperable with other programs being developed under CVISN or in conjunction with CVISN.

Deskside Activity – Missouri has an existing architecture that allows for access between state regulatory agencies for credential verification. This system has existed for a number of years. Information about authority registration, financial responsibility (insurance), fuel tax and pro-rate plates is maintained daily on the Missouri's State Data Center's mainframe system. This information is linked to the mainframe system at the Highway Patrol. Missouri intends to extend this system to encompass all national systems for credential administration and integration of Electronic Screening. In the future, it is intended that Missouri's deskside system is fully compatible with and access SAFER, the IFTA and IRP Clearinghouses and the Unified Carrier Register.

Deskside activity is defined as computer systems developed to track:

- motor carrier compliance with federal motor carrier safety regulations;
- financial responsibility, and credentials;
- size, weight requirements; and
- other regulations.

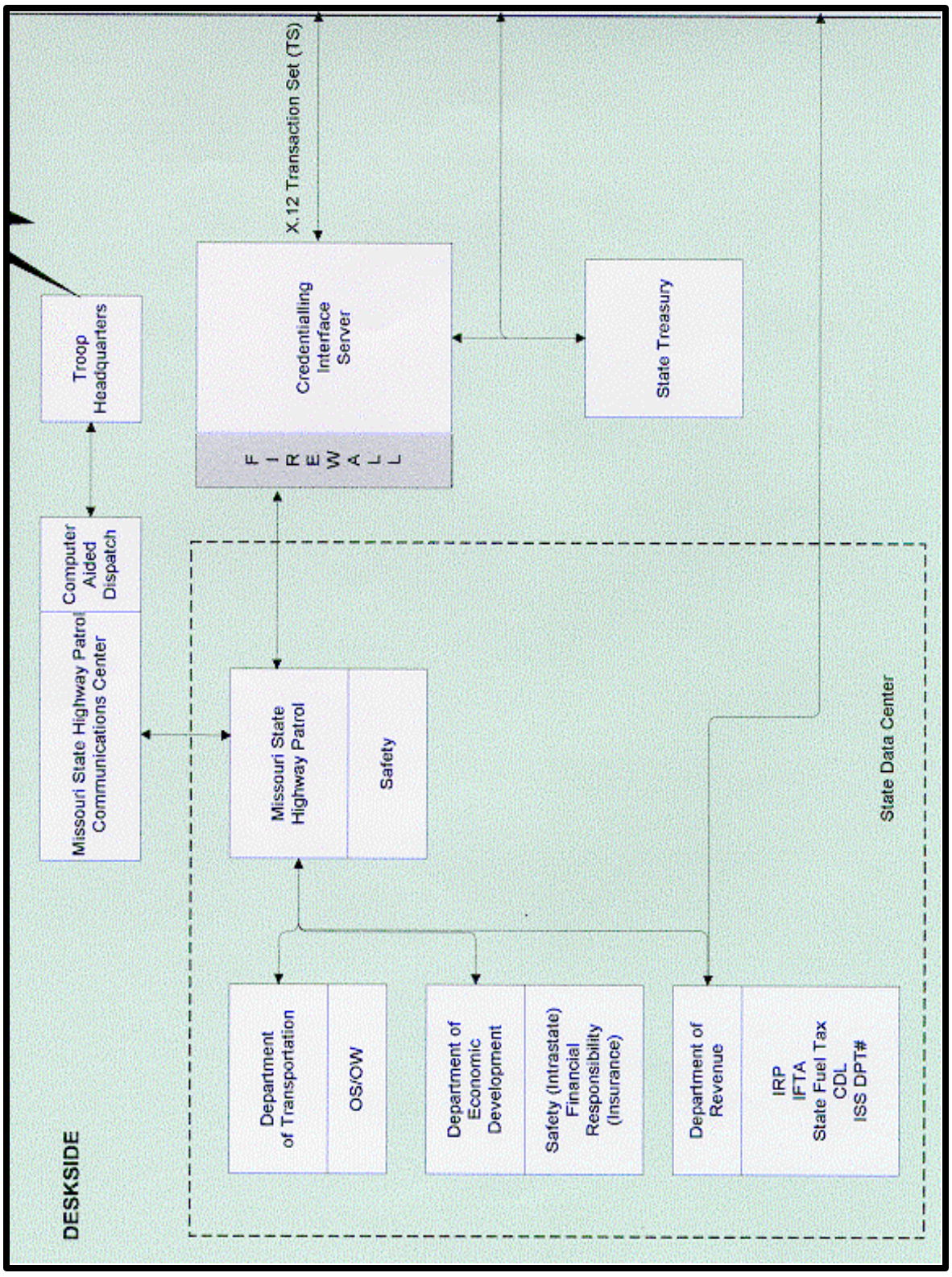
Deskside systems will include:

- The use of Aspen at all major inspection sites;
- The interoperable of state systems with:
  - **SAFER** (a system that shows a snapshot of carrier safety and inspection fitness),

- IFTA and IRP Clearinghouses (a system that indicates compliance with fuel tax, license credentials and fee payments),
- Unified Carrier Register (**UCR**) (a registration system that indicates financial responsibility and safety fitness), and
- Commercial Drivers License Information System (**CDLIS**) (a tracking system for checking multiple driver licenses and driver convictions).

As referenced in the completed ITS/CVO projects, Missouri has a big portion of the deskside activities completed. Missouri has always been unique in the area of accessibility of data between state agencies, which has been shared and used for credential verification for a number of years. This information is incorporated into the Motor Carrier Management Information System (**MCMIS**) mainframe system. This system is a national database at Federal Highway Administration for inspections, accidents and compliance reviews. The **ASPEN** software is already in place and installed in 92 computers within 4 state and city offices. State inspections are being downloaded daily to the SAFETYNET LAN server. The state has developed an intrastate SAFESTAT system to target high-risk carriers. Electronic Screening will be deployed within this plan at the roadside. Deskside projects will be needed to integrate credential information into a flagging system for mainline credential verification. The SAFER system is accessible through the SAFETYNET LAN server. All enforcement agencies have access to Micro Census for carrier information and CDLIS for verification of commercial drivers license information.

Figure 6.1 reflects the deskside portion of Missouri's CVO program. The interface between the Department of Revenue (Highway Reciprocity), Department of Economic Development (Motor Carrier and Railroad Safety), and Department of Transportation (Overweight/oversize requirements) within the broken line area is in place today. The next phase of deskside activity is connecting this information to the credentialing interface server and the Computer Aided Dispatch. The detail of this next phase is described within project numbers 4 and 5 within this plan.


DESKSIDE
Troop Headquarters
Computer Aided Dispatch
Missouri State Highway Patrol Communications Center
X.12 Transaction Set (TS)
Credentialling Interface Server
FIREWALL
State Treasury
Missouri State Highway Patrol
Safety
State Data Center
Department of Transportation
OS/OW
Department of Economic Development
Safety (Intrastate) Financial Responsibility (Insurance)
Department of Revenue
IRP
IFTA
State Fuel Tax
CDL
ISS DPT#

Roadside activity is defined to be any commercial vehicle operation that occurs on or at the side of the road. The roadside activity includes mainline electronic screening of credentials, vehicle weight, height, length, etc. at fixed weigh stations and by portable units. Due to the large number of vehicles traveling through this state and the advancing age of a majority of the fixed weigh stations, Missouri is reaching a critical point of maintaining the safety of the motoring public on our highways. This state wants all motorists and motor carriers to have safe vehicles and to promote a crash free environment. Missouri also recognizes that weigh station operations do not always produce a safe environment for motorists. Presently, a majority of the state's weigh stations do not have sufficient access lanes to keep commercial vehicles from backing out on the mainline. When backup occurs, commercial vehicles are allowed to bypass the station without safety verification. Manpower is limited to these stations. Budgets are limited and new weigh stations cost around $3.5 million for each lane direction to build. In order to maintain safety in our state, our efforts must be placed in the most effective direction. Therefore, enforcement efforts must be focused toward what will produce the greatest benefit.

Deskside activity is the conduit by which: 1) the motor carrier industry acquires the necessary authority to operate in and through the state of Missouri; 2) agencies administer, enforce and verify motor carrier compliance; 3) agencies disseminate data to support the selection of targeted carriers and enforcement decisions; as well as 4) data interchange between state, provincial, federal agencies and motor carrier industry.

Missouri has an excellent communication infrastructure between agencies to provide on-line information exchange. A fiber optic network is in place on highway right-of-ways on a majority of the major highways in this state. The fiber optic system provides a communication path from MSHP's mainframe computer to fixed weigh stations and the avenue required to amplify data transmission at the speeds necessary for checking electronic credentials of commercial vehicles operating at mainline highway speeds. Significant investments have been incurred for the purchase of computer equipment and building of databases needed to operate CVO enforcement and credentialing electronically.

In conjunction with the MCSAP 100 Site Project, portable computers are used in the inspection process to shorten the time frame for entering inspection reports into the computer network. A LAN for the SAFETYNET system has been purchased by MSHP to download the inspections from portable computers to the main frame server on a daily basis. This LAN will be connected to the state data center for accessing all other agencies' files.

Data on IRP, IFTA, commercial driver's licenses, Safety Financial Responsibility and oversize/overdimmension permits are stored on a state data mainframe system and is accessed by the Highway Patrol. Data will be placed in the interface server to be downloaded to the server at the weigh facility. This data will be reflected in the use of flags. Additional information needed after that time will be requested back to the

mainframe system. The LAN at the weigh facility will be continuously fed updated data. This interface between deskside and roadside activities is depicted in **Figure 6.1a**.

Figure 6.1b. is a schematic diagram of Missouri's overall commercial vehicle operation system. This diagram shows how roadside and deskside activity will be interoperable with current and planned ITS/CVO systems. This diagram also indicates how Missouri hopes to interact with motor carriers, service bureaus, transmit funds as well as communicating with other states. In many of the transactions between Missouri's system and other federal and state commercial vehicle operation systems, standard X.12 transaction sets will be used for electronic data exchange.

Figure 6.1a Roadside Activity

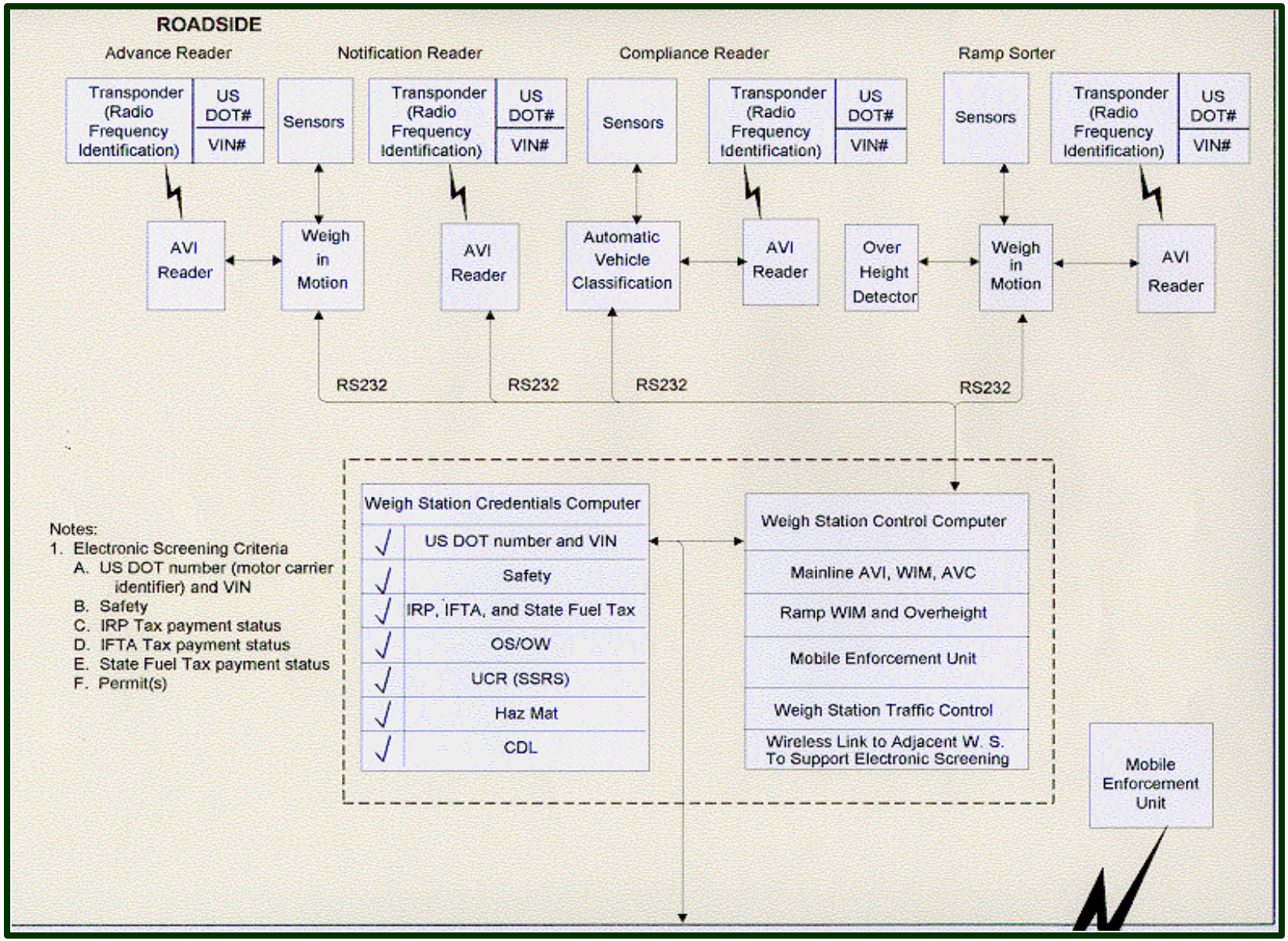
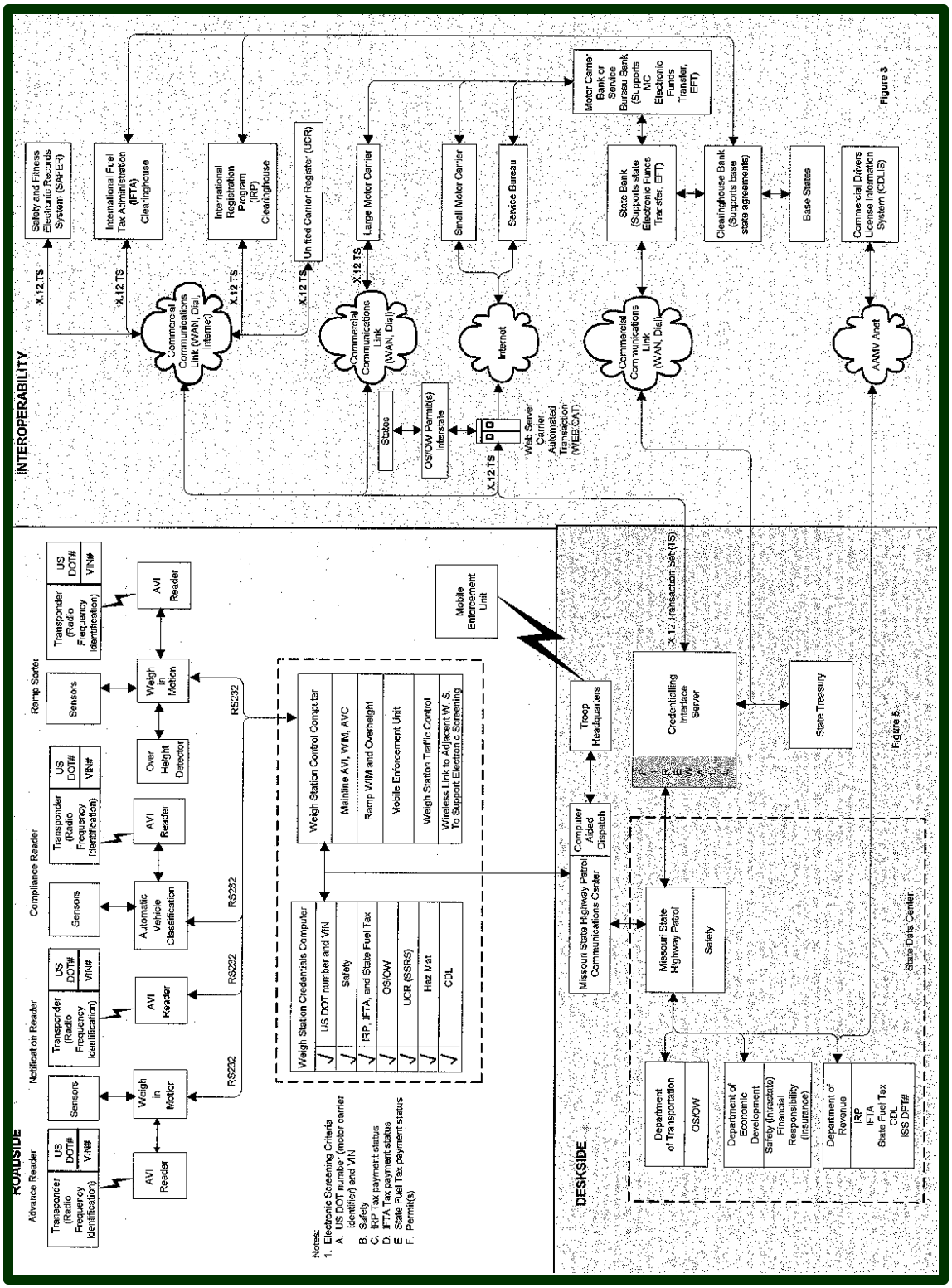


Figure 6.1b. State Architecture



6.2 Project Objectives and Assessment:

The objectives of the roadside projects are: 1) increase safety in and around weigh stations; 2) decrease the number of legal commercial vehicles required to exit the highway system at fixed weigh stations, and 3) upgrade fixed weigh stations and deploy electronic screening of commercial vehicles at mainline speeds.

There are several ways to reach these objectives. Alternatives are: mainline screening installed at various locations throughout the state, multi-state plan on shared state line weigh facilities, eliminate screening at state exit points, require a selected sample of trucks to be required to exit at weigh stations or some type of identification program for carriers with good records. Due to the geographical layout of large metropolitan areas, some of these objectives are feasible while others are not. Missouri intends to implement mainline screening as its primary method of reaching these objectives.

The process of how mainline screening will work is described as follows. Commercial vehicles traveling Missouri's interstate network are required to stop at fixed weigh stations. Up to a mile before the fixed weigh station a transponder equipped commercial vehicle traveling at interstate speed approaches a weigh in motion (WIM) and a transponder reader. The commercial vehicle is weighed and classified to insure compliance with the Federal Bridge Law and State Size and Weight Laws. The transponder reader checks operating credentials and safety record. If the WIM or reader indicates a possible violation, a transponder-equipped vehicle will be signaled by means of a light and audible tone to pull through the fixed weigh station. The driver of a commercial vehicle must be given a by-pass message from his vehicle transponder or pull into the weigh station. Only commercial vehicles equipped with transponders having red and green lights and an audible tone will be allowed to by-pass a weigh station. Transponders or toll tags will contain a unique identifier such as a USDOT number that will identify the vehicle or carrier. Once the carrier identifier is read, a request for information is made to the computer system located in the weigh station.

The carrier identifier will be routed to a data base server located in the weigh station building to search records maintained by the MSHP and a message is sent to the notification reader to notify the commercial vehicle driver to bypass or pull-in to the weigh station. The data base server will contain real-time status of IFTA, IRP, CDL, OS/OW, Missouri Special Fuel User Tax, OOS, Financial Responsibility, accident history and safety ratings for commercial vehicles approved to participate in the Missouri weigh station clearance program.

A Compliance Reader on the mainline roadway will monitor transponder equipped commercial vehicles bypassing the weigh station to insure that a vehicle given a pull-in signal is not bypassing the weigh station without authorization. When an unauthorized vehicle bypasses the weigh station an alarm will be sounded to alert the weigh station officer of the unauthorized bypass. The officer can initiate remedial action to other law

enforcement officers or through computer entry, notify other weigh stations or portable units of the unauthorized bypass. Commercial vehicles with transponders directed to pull-in at the weigh station and vehicles that do not have transponders will be screened and sorted on the ramp into the weigh station. All vehicles on the ramp will be classified by number of axles and axle spacing, have axle and gross weights determined by individual wheel or dual wheel weights, and have vehicle height and speed checked. Vehicles will then be directed to the static scale lane or bypass lane by lane control signals.

If a truck passing over the ramp WIM is directed to the scale lane for static weighing or other violations, an identification number is assigned and displayed on the video screen in the scale building. If the truck is directed to the bypass lane, no identification number is assigned. When a truck is directed to the scale lane but proceeds to the bypass lane, an alarm or buzzer is sounded in the scale building. The static scale operator manually turns on the traffic signals controlling the bypass lane. By monitoring the movement of the truck directed to the scale lane, the system assigns the same identification number to the truck when it reaches or drives on the static scale. The WIM portion of the video screen displays a minimum of five trucks processed and directed to the scale lane and will permit the scale operator to view data from the in-motion and static scales for the same truck. A means is provided in the scale building for resetting the identification number and manual operation of the lane control signals.

The ramp WIM system automatically and accurately determines the weight of each axle and tandem axle of a multi-axle vehicle having up to eleven axles and establish the gross weight of the vehicle by summing individual axle weights. Axle weights and calculated gross weight of each vehicle are established to within plus or minus five percent of the actual vehicle weights based on a vehicle speed of 30 mph.

The ramp WIM system provides 14 vehicle classifications. Classes 1 through 13 are in accordance with the Federal Highway Administration classification scheme. Class 14 identifies any vehicle that does not conform to the criteria for classes 1 through 13. The ramp WIM computer provides sufficient flexibility in programming parameters for each vehicle class so that accurate classifying can be achieved.

The deskside projects will help this state in meeting its objectives of: targeting carriers with high crash rates; improve the timeliness and accuracy of information supplied to the roadside whether online or upon request to support the selection of targeted carriers and enforcement decisions; develop and enhance interoperability of data systems; identify, analyze, and evaluate the benefits and impact of an electronic method of obtaining and processing registration credentials; use enhanced technologies and information systems to help exchange data electronically with industry, member jurisdictions, and other related organizations; and to ensure CVISN capability.

In addition to determining whether projects meet these stated objectives, projects must also be assessed using other standards as well.

Each project must be viewed in relationship to:

1. cost,
2. amount of resources needed,
3. source of funding,
4. personnel needs,
5. efficiency gained,
6. safety impact,
7. technology requirements,
8. timing of the project in respect to other state activities,
9. the agencies involved,
10. the buy-in of the departments heads and lead agency, and
11. the effect on the industry.

This criterion can help to determine priority projects or ranking projects dependent on the number of criteria each project addresses. Future projects will be ranked in accordance to the mission, goals and objectives and how the project addresses the additional 11 items listed above. Only those projects meeting a majority of these criteria will be considered for future projects.

6.3 Project Descriptions: *(Listed in order of start date.)*

Project 1. Aspen Deployment

Description of Project – Purchase additional computers and install ASPEN Software at all fixed and portable weigh facilities and other mobile inspection sites for uploading and downloading inspection data.

Completed Phase of Project - Through the Motor Carrier Safety Assistance Program, state agencies received funding to purchase portable laptop computers for installation of the ASPEN software for uploading inspection data beginning in early 1996. Over the next two years, the Highway Patrol purchased 89 computers with ASPEN inspection software for placement at all fixed and portable weigh facilities. In addition, 11 computers for St. Louis and Kansas City Police Department as well as 25 laptops for Motor Carrier and Railroad Safety has been purchased and loaded with the ASPEN software. Inspection data is being uploaded using the ASPEN software.

Incomplete Phase of Project – Enhance the inspection data uploading process by wireless communication and adding personal computers at fixed weigh facilities to enhance access of inspection information. We have begun testing two portable units with mobile data terminals, which have been loaded with ASPEN and the Inspection Selection System to access interstate inspection data. This project when completed will allow wireless inquiries into the Missouri Uniform Law Enforcement System (MULES) and wireless downloading of inspection data into the SAFETYNET repository.

Project Start Date – 10/96

Project Completion Date – 10/1998

Staffing Requirements – No additional staffing requirements are needed.

Benefits – To bring the state of Missouri closer to CVISN implentation.

Participating Agencies – Highway Patrol, Motor Carrier and Railroad Safety, St. Louis Police Department, Kansas City Police Department.

Start Up Cost Estimate - $384,600.00

Estimated Annual Operating Costs - $324,462.

Funding Source – 20% state funds and 80% federal funds.

Goals and Objectives Addressed - 2a, 3a, 3b, 5b.

Element Addressed – Safety Information Exchange, Deskside Activity.

Project 2. Wireless Mobile Enforcement Data System

Description of Project - The Mobile Enforcement Data System will allow the commercial vehicle enforcement's mobile units the capability to generate electronic driver/vehicle examination reports, uniform complaint summons, accident report, warnings and officer daily reports, which can be downloaded to the MSHP mainframe computer and uploaded to SAFETYNET. This system will allow the officers to make computer inquiries via wireless communications directly to the MSHP mainframe computer to check for vehicle registration, the required carrier credentials, driver CDL status and any other required request for information.

The MSHP in conjunction with the MoDOT will examine the feasibility of incorporating a portable transponder reader into the portable commercial vehicle enforcement units. This project would allow the Commercial Vehicle Enforcement Division of the MSHP to incorporate selection criteria into existing MoDOT SHRP sites. The portable enforcement units could monitor the movement of commercial vehicles as they pass the state's SHRP sites much in the same fashion as executed at fixed weigh stations. This will be made possible through the MSHP Mobile Enforcement Data Terminal program.

Phase 1. Acquisition of 22 Mobile Data Computers (Portable Weighing Units).
Phase 2. Procurement of Mounting Brackets and Installation of Mobile Data Computers.
Phase 3. Develop and Implement Electronic Reporting Software.

Project Start Date - 10/96

Project Completion Date – Phase 1. – Completed 12/97. Phase 2. – 6/98. Phase 3. - 10/98.

Staffing Requirements – Thirty percent of one full time employee.

Benefits - Improved quality and timeliness of inspection and crash data information from roadside to SAFETYNET for upload to MCMIS. Further expansion of the State's ITS/CVO program by incorporating Mobile Enforcement Units.

Participating Agencies – Highway Patrol.

Start Up Cost Estimate – Phase 1 Costs **–** $153,978.00, Phase 2 Costs - $21,780.00 Phase 3 Costs - $178,000.00. Total Project Costs $353,758.00.

Estimated Annual Operating Costs – $12,000.00

Funding Source – Phase 1. 80% federal funding, 20% State funding. Phase 2. 80% federal funding, 20% State funding. Phase 3. 100% state funding.

Goals and Objectives Addressed - 2c, 3a

Element Addressed – Credential Administration, Deskside Activity.

Project 3. SASHTO Multi-Permit Program

Description of Project - The Mo. Department of Transportation joined the Southeast Association of State Highway and Transportation Officials (**SASHTO**) Multi-State Permit Program in September 1997. Currently there are 16 member states with a very active outreach program. Of these 16 states, membership includes states from the Western Association of State Highway and Transportation Officials (**WASHTO**) and the Mississippi Valley Region.

Missouri committed to participate with a signed agreement contingent upon the program being included in its revised administrative rules (oversize and overweight permit regulations). This program provides a single routine uniform mechanism for processing multi-state single trip permits for oversize/overweight vehicle combinations that travel between member states which are within an established dimension and/or weight envelope. This program establishes a one-stop shop for oversize/overweight vehicles. Motor carriers obtain a single document recognized by participating member states. A single location accepts applications and collects multi-state fees.

Missouri is in the process of including this program in the established oversize/overweight rule for authority to proceed implementation. Once the rulemaking procedure has been completed, the program will be implemented immediately. Participation includes the issuance of multi-state permits by the later part of the calendar year 1998. Missouri participates in quarterly, semi-annual and annual meetings of the SASHTO working group and is an active committee member and supports program expansion to other states.

Project Start Date - 9/1997

Project Completion Date – 10/1998

Staffing Requirements – No additional staffing will be needed. The additional functions of this program will be absorbed into the current number of FTE's.

Benefits - This program is another step in improving customer service with the commercial vehicle industry and implementation of electronic credentials by being able to issue a permit for oversize and/or overweight that will not only be good in Missouri, but in the SASHTO participating states as well.

Participating Agencies – Mo. Department of Transportation.

Start Up Cost Estimate - $11,750.00

Estimated Annual Operating Costs - $10,120.00

Funding Source - This program is supported 100% by state funds.

Goals and Objectives Addressed – 3c, 3d, 4a, 4b, 4d, 4e.

Element Addressed – Safety Information Exchange & Credential Administration Deskside Activity

Project 4. Computer Aided Dispatch (CAD)

Description of Project - While this function will be used to dispatch enforcement personnel to an incident, it will also be incorporated into the ITS/CVO process in the following manner. A process will be developed to automatically send out a dispatch from the LAN server to enforcement teams located in the vicinity of the weigh station if a commercial vehicle fails to pull into a weigh station when directed to do so by transponder. If the server transmits a "No" response back to the notification reader and a red light to the vehicle, the same information along with carrier and vehicle information will be passed to the compliance reader located down-stream of the advance reader and WIM system. If the vehicle fails to pull into the weigh station and passes the compliance reader, the server is notified and a dispatch is sent to the troop headquarters' computer to dispatch enforcement personnel and try to contact the vehicle in question. The dispatch information will include carrier identifier, VIN, license information, time of day, month, day and year the vehicle in question ignored the pull-in signal for pre-clearance.

Phase 1. To establish project administrator, contract support, CAD function design & CAD server installation – 10/98.
Phase 2. Full implementation of computer aided dispatch network to include enhanced network design allowing full wireless transmission of enforcement data and criminal records checks. Start Date of 5/98 and Completion Date of 6/00.

Project Start Date – 10/97

Project Completion Date - 6/00

Staffing Requirements: Unknown at this time.

Benefits:
Improved quality and timeliness of inspection and crash data information from roadside to SAFETYNET for upload to MCMIS. Further expansion of the State's ITS/CVO program by incorporating Mobile Enforcement Units.

Participating Agencies – Highway Patrol.

Start Up Cost Estimate – Phase 1 Costs – $2,260,242.00. Phase 2 Costs - $1,224,758.00. Total Costs $3,485,000. Commercial Vehicle Portion of Total Costs is $697,000.

Estimated Annual Operating Costs - $20,000 for commercial vehicle portion.

Funding Source – Phase 1. 80% federal and 20% state funds. Phase 2. 100% state funding.

Goals and Objectives Addressed - 2b, 2d, 3a.

Element Addressed – Other, Roadside Activity.

Project 5. Implement Mainline Screening at a Fixed Weigh Station on I-44

Description of Project - Install radio frequency (**RF**) readers at a SHRP site near a fixed weigh station located on the eastbound I-44 highway in Newton County near Joplin, Missouri. The roadside readers will be connected to a LAN server located at the fixed weigh station through fiber optic cable or wireless-bridge. Up-to-date data on IRP, IFTA, SSRS, Financial Responsibility, OS/OW, Missouri Special Fuel User Tax, OOS, accident history and safety ratings will be used to determine compliance for pre-clearance. The weigh station in southwest Missouri was selected because the location has a large number of interstate vehicles equipped with transponder devices. Many of these carriers are participating in various ITS projects throughout the country as well as fleet and facility management programs within their own terminals. This project will require the development of a computer system to interface participating agencies' data systems with the MSHP's mainframe computer. This system and all aspects of the system will be CVISN compatible. The MoDOT and MSHP began the contract process for system development in January 1998. The following segments of the project are to be under development simultaneously.

Incorporate a RF reader capable of reading all transponders presently being used to-date in the ITS/CVO arena with an existing, statistic-gathering main line WIM with classification capabilities.

Agencies that are responsible for the issuing of credentials and the monitoring of compliance with state and federal rules and regulations will download critical pre-clearance information into a mailbox, so to speak, located within the MSHP's mainframe computer. Information related to the carriers OOS and accident history for either inter or intrastate carriers maintained within MSHP mainframe will also be incorporated into these pre-clearance bins.

This information will be assimilated by identifiers such as USDOT number, state number and VIN number to properly identify carriers and vehicles participating in the pre-clearance program.

Flags will be created for each of the critical pre-clearance elements that will be sent to the server located at the fixed weigh station. These "yes" or "no" flags, along with the carrier and vehicle identifiers will be all that is stored on the LAN server at the weigh station.

Develop and incorporate a software program that allows the server located at the fixed weigh station to communicate with the transponder reader, WIM and classifier. The reader will identify a participating carrier by USDOT or state number and vehicle identification number. The vehicle will be weighed and classified at the same time. This information will be passed to the server and a query will be generated to determine if the carrier meets the required pre-clearance criteria elements. All carriers and vehicles will be subject to random selection to insure compliance. If for some reason a

carrier's vehicle is required to pull into a weigh station because it does not meet one or more of the pre-clearance elements, the server will automatically query the mainframe computer. The files will be searched and the reason for the denial will be forwarded back to the weigh station to assist the officer in determining what enforcement action is necessary.

This program will be completed in phases. Phase 1 will consists of implementing a contract with outside vendor for writing programs to dump state data into a flagging system. Phase 2 will consists of the purchase and installation of equipment at the roadside location. Phase 3 full implementation and testing the system.

Project Start Date – 1/98 with program planning.

Phase 1 Completion Date - 10/98
Phase 2 Completion Date - 10/98
Phase 3 Completion Date - 12/98 See Figure 6.3.

Staffing Requirements – Implementation of the new flagging system will require 35% of the time of one FTE annually to maintain and operate this system.

Benefits - Relieve congestion, enhance the safety of the motoring public, allow carriers in compliance with state and federal rules and regulations to by-pass weigh station and allow enforcement personnel to focus their attention on carriers that are in violation or continue to violate the law.

Participating Agencies - The Highway Patrol, Motor Carrier and Railroad Safety, Highway Reciprocity and Mo. Department of Transportation.

Start Up Cost Estimate - $750,000.

Estimated Annual Operating Costs - $38,000

Funding Sources – Seeking 100% federal funds.

Goals and Objectives Addressed - 1a, 2b, 2c, 2d, 3a, 4d.

Elements Addressed – Electronic Screening, Roadside and Deskside Activity.

Figure 6.3 Work Schedule for Implementing Project 5.

	Start	End	Duration	1998		
	Date	Date		Q2	Q3	Q4
Functional Data Requirements	04/17/98	09/30/98	119 days			
Roadside AVI and WIM	04/20/98	09/30/98	118 days			
Reader	04/20/98	08/28/98	95 days			
Integrate AVI and WIM(DCS)	04/20/98	09/30/98	118 days			
Weigh Station Server	04/20/98	08/28/98	95 days			
Communication between AVI and Weigh Station	04/20/98	09/15/98	107 days			
Test Subsystem	08/03/98	10/30/97	65 days			
Fiber Optic Link with J.C., MO	04/20/98	07/31/98	75 days			
Test Fiber Optic Link	07/01/98	07/31/98	23 days			
Subsystem Test Between Weigh Station & J.C., MO	07/20/98	07/31/98	10 days			
Legacy System in J.C., MO	04/20/98	11/2/98	141 days			
Test Legacy System	08/30/98	11/02/98	46 days			
Test Flags at Weigh Station Server	08/30/98	11/02/98	46 days			
Test Flags at AVI	08/30/98	11/02/98	46 days			
Test Total System	09/30/98	12/01/98	45 days			

Project 6. Analysis of Requirements for IFTA/IRP Clearinghouse

Description of Project - This project will define the necessary software and programming needs to interface with the IFTA and IRP clearinghouses. Access to these clearinghouses will allow the state to electronically transmit data to and from other jurisdictions. It will also allow for the transmittal of monies due to and due from other participating jurisdictions in a much more timely fashion.

Project Start Date - 10/98

Project Completion Date - 10/2000

Staffing Requirements – Current staff will most likely be able to perform the necessary program changes.

Benefits: Mailing costs will be all but eliminated in reference to the data that will be transmitted to participating jurisdictions as will the need for Highway Reciprocity personnel to handle the documents. The transmittal of data will be all but paperless which will eliminate the need to print data.

Participating Agencies – Highway Reciprocity.

Start Up Cost Estimate – $200,000.

Estimated Annual Operating Costs - $10,000.

Funding Source – Anticipated 80% federal fund, 20% state funds.

Goals and Objectives Addressed –3d, 3e.

Element Addressed – Credential Administration, Deskside Activity.

Project 7. Implement Electronic One Stop Shop

Description of Project - An outside firm is evaluating the Midwest Electronic One Stop Shop program. Missouri participated in this test. Our view of the software produced by this program is mixed in that it seems to work fairly well for the SSRS program, but not well for IRP, IFTA or oversize/overweight permits. If this program is modified to correct the problems, Missouri would be willing to implement it use.

Missouri will continue to search for an electronic credential software package, internet format or design a system that can be simple and easy for state and industry use. This software will include links between agencies and the ability to route the transactions to the proper agency location. Like the test program, the state will solicit volunteer motor carriers and in addition, permit companies for the pilot. Training will be provided to state personnel and pilot volunteers. After a successful test, the software or access site will be made available to all motor carriers, permit agencies or association who desire to use it. At that time, training sites around the state will be selected for education of the system for public use.

In addition to implementing one-stop shop on interstate operations, MCRS will implement electronic renewal of credentials and electronic filing of proof of insurance for intrastate operations at the same time.

Project Start Date – 6/99.

Project Completion Date - 12/2000.

Staffing Requirements – Current staff will most likely be able to perform the necessary program changes.

Benefit - Electronic one-stop shop has the potential to enhance the efficiency of the administration processes of applying for and obtaining credentials, permits and managing fuel tax administration. Electronic filings should reduce time, labor and cost expended by the motor carrier industry upon compliance with these requirements.

Participating Agencies – Div. of Motor Carrier & RR Safety & Highway Reciprocity.

Start Up Cost Estimate - $500,000.

Estimated Annual Operating Costs – Unknown at this time.

Funding Source - Expected funding sources are 50% state and 50% federal funds.

Goals and Objectives Addressed - 3c, 3d, 4f, 5d.

Element Addressed – Credential Administration, Deskside Activity.

Project 8. Implement Mainline Screening at Two Fixed Weigh Stations on I-70.

Description of Project - Fixed weigh stations located on the eastbound and westbound sides of I-70 highway in St. Charles County, near Foristell, will be upgraded with transponder readers and mainline weigh-in-motion. The roadside reader will be connected through fiber optic cable to a local area network server located at the fixed weigh station. Up-to-date data on IRP, IFTA, Oversize and overweight, SSRS credentials, Financial Responsibility, Special Fuel User Tax, out-of-service information, accident history and safety ratings will be stored on the server. This data and data obtained on the mainline regarding weight, height and length will be quickly analyzed to give a green light/red light command to a driver to either enter or by-pass the weigh station.

The same system will be installed at a second site located on I-70 in Lafayette County West of Odessa, Missouri. A new facility will be built to replace the old facility located east of Odessa.

Project Start Date – 7/99 for first site, 12/99 for second site.

Project Completion Date – 12/99 for first site, end of fiscal year 2000 for second site.

Staffing Requirements – Current staff will most likely be able to perform the necessary program changes.

Benefits - Reduce the number of vehicles that need physical verification by screening compliance at mainline speeds. Therefore, personal services can be dedicated to monitoring vehicles not in compliance with regulations and carriers with high crash rates.

Participating Agencies – Mo. Department of Transportation and Highway Patrol.

Start Up Cost Estimate - $1,000,000.

Estimated Annual Operating Costs – $75,000

Funding Source - Expected funding sources are 10 % state and 90% federal funds.

Goals and Objectives Addressed – 1a, 2b, 2c, 2d, 3a, 4d.

Elements Addressed – Electronic Screening, Roadside Activity.

6.4 Summary of Project Timelines and Costs

As previously mentioned, these projects are either currently in place or in the planning stages. Although each project has anticipated beginning and ending dates, these dates are subject to change depending on the availability of funding. Figures 6.3a and 6.3b indicate the current timetables for all projects shown in this plan. The solid lines indicate the project in progress. The broken lines indicate future projects.

A summary of the projected implementation and operating costs are depicted in Figure 6.3c. This analysis shows the amount of state and federal funds needed to complete these projects. In addition, estimated annual operating costs are also included.

Figure 6.4a Schedule of Projects

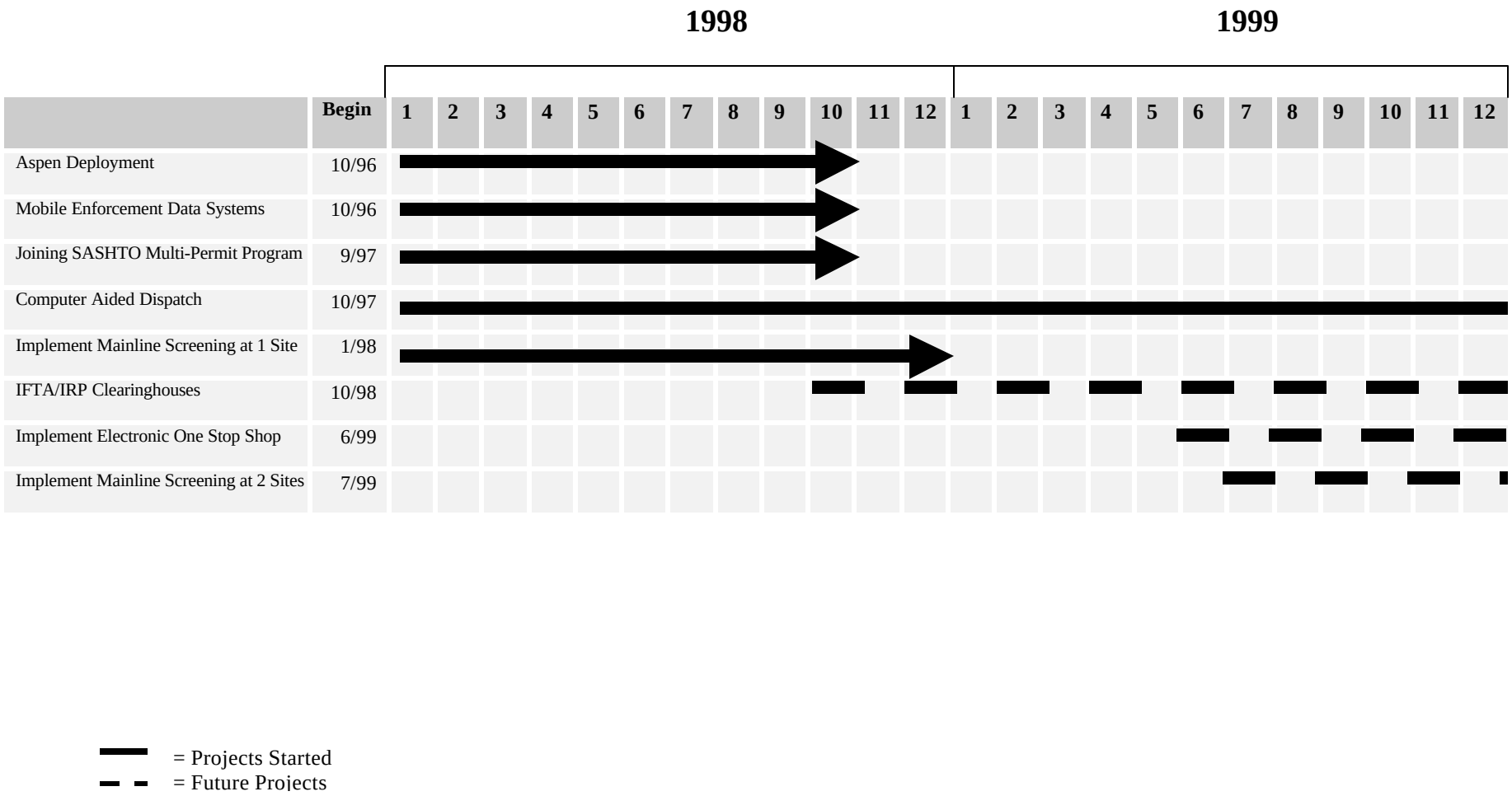


Figure 6.4b Schedule of Projects

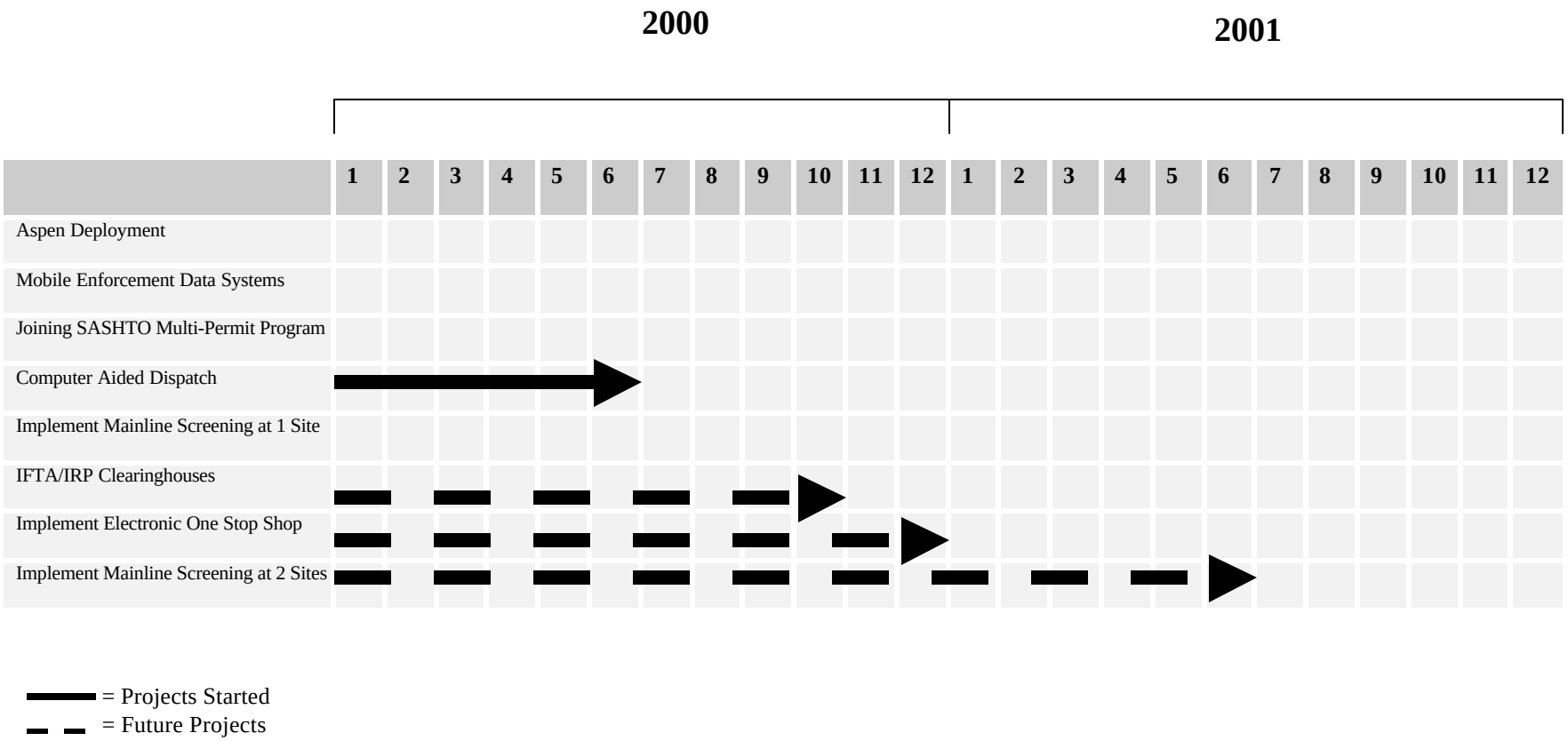


FIGURE 6.4c Project Costs and Funding Sources

	DEVELOPMENT COSTS STATE FUNDED	DEVELOPMENT COSTS FEDERAL FUNDED	TOTAL DEVELOPMENT COSTS	EST. YEARLY OPERATING COSTS
Aspen Deployment	**$76,920.00**	**$307,680.00**	**$384,600.00**	**$324,462.00**
Mobile Enforcement Data Systems	**$213,151.60**	**$140,606.40**	**$353,758.00**	**$12,000.00**
Joining SASHTO Multi-Permit Program	**$11,750.00**	**0.00**	**$11,750.00**	**$10,120.00**
Computer Aided Dispatch	**$335,361.28**	**$361,638.72**	**$697,000.00**	**$20,000.00**
Implement Mainline Screening at 1 Site	**0.00**	**$750,000.00**	**$750,000.00**	**$38,000.00**
IFTA/IRP Clearinghouses	**$40,000.00**	**$160,000.00**	**$200,000.00**	**$10,000.00**
Implement Electronic One Stop Shop	**$250,000.00**	**$250,000.00**	**$500,000.00**	**0.00**
Implement Mainline Screening at 2 Sites	**$100,000.00**	**$900,000.00**	**$1,000,000.00**	**$75,000.00**
TOTAL	**$1,027,182.88**	**$2,869,925.12**	**$3,897,108.00**	**$489,582.00**

7.0 Training

In order to implement CVISN, training at all levels will be needed. This includes training of people involved in the implementation of all systems to conform to CVISN architecture. The amount of training needed will vary with each state and the stage of implementation of CVISN. The state of Missouri will attend any necessary training seminars that will be developed and facilitated by the Center for Transportation Research and Education in conjunction with Federal Highway Administration as the center changes its role from supporting State business plan development to delivering ITS/CVO training courses. Some training will begin in the summer of 1998. The state intends to take any training that is needed or required to implement CVISN.

8.0 Contact Names

The agency names, contact names, addresses, telephone, fax numbers and Internet addresses are as follows:

Lead Agency: Missouri Highway and Transportation Department
Mr. Bill Wilson, Administrator, Motor Carrier Services, ITS/CVO Program Manager, 573-751-2820, Fax No. 573-751-7408

Mr. William Stone, ITS/CVO Project Manager, 573-526-0122,
Fax No. 573-526-0120, Internet Address: stoneb@mail.modot.state.mo.us

Missouri State Highway Patrol
Division of Commercial Vehicle Enforcement
Mr. Gary Steinmetz, Assistant Director, ITS/CVO Project Manager,
573-526-6128, Fax No. 573-526-4637

Missouri Department of Revenue
Highway Reciprocity Commission
Mr. Darrell Maples, Computer Information Specialist, Missouri Department of Revenue, ITS/CVO Project Manager,
573-751-6524, Fax No. 573-526-4190

Missouri Department of Economic Development
Division of Motor Carrier and Railroad Safety
Ms. Barbara Hague, Transportation Compliance and Audit Program Administrator, ITS/CVO Project Manager
573-751-7128, Fax No. 573-751-0315
Internet Address: bhague@mail.state.mo.us

9.0 State Agency Names, Addresses and Web Sites

Missouri Department of Transportation
Joe Mickes, Chief Engineer
105 West Capitol Avenue
P. O. Box 270
Jefferson City, Missouri 65102-0270
573-751-3322, Fax No. 573-751-8267
Web Page Address: http://www.modot.state.mo.us/

Missouri State Highway Patrol
Weldon L. Wilhoit, Superintendent
1510 East Elm
Jefferson City, Missouri 65102
573-751-3313
Web Page Address: http://www.dps.state.mo.us/dps/mshp/hp.htm

Missouri Department of Economic Development
Joseph Driskill, Department Director Economic
HST Room 680
P. O. Box 1157
Jefferson City, Missouri 65102-1157
573-751-4962, Fax No. 573-751-7258
Web Page Address: http://www.ecodev.state.mo.us/

Missouri Department of Natural Resources
Stephen Mahfood, Director
P.O. Box 176
Jefferson City, MO 65102
573-751-4732, Fax No.573-751-7627
Web Page Address: http://www.state.mo.us/dnr/homednr.htm

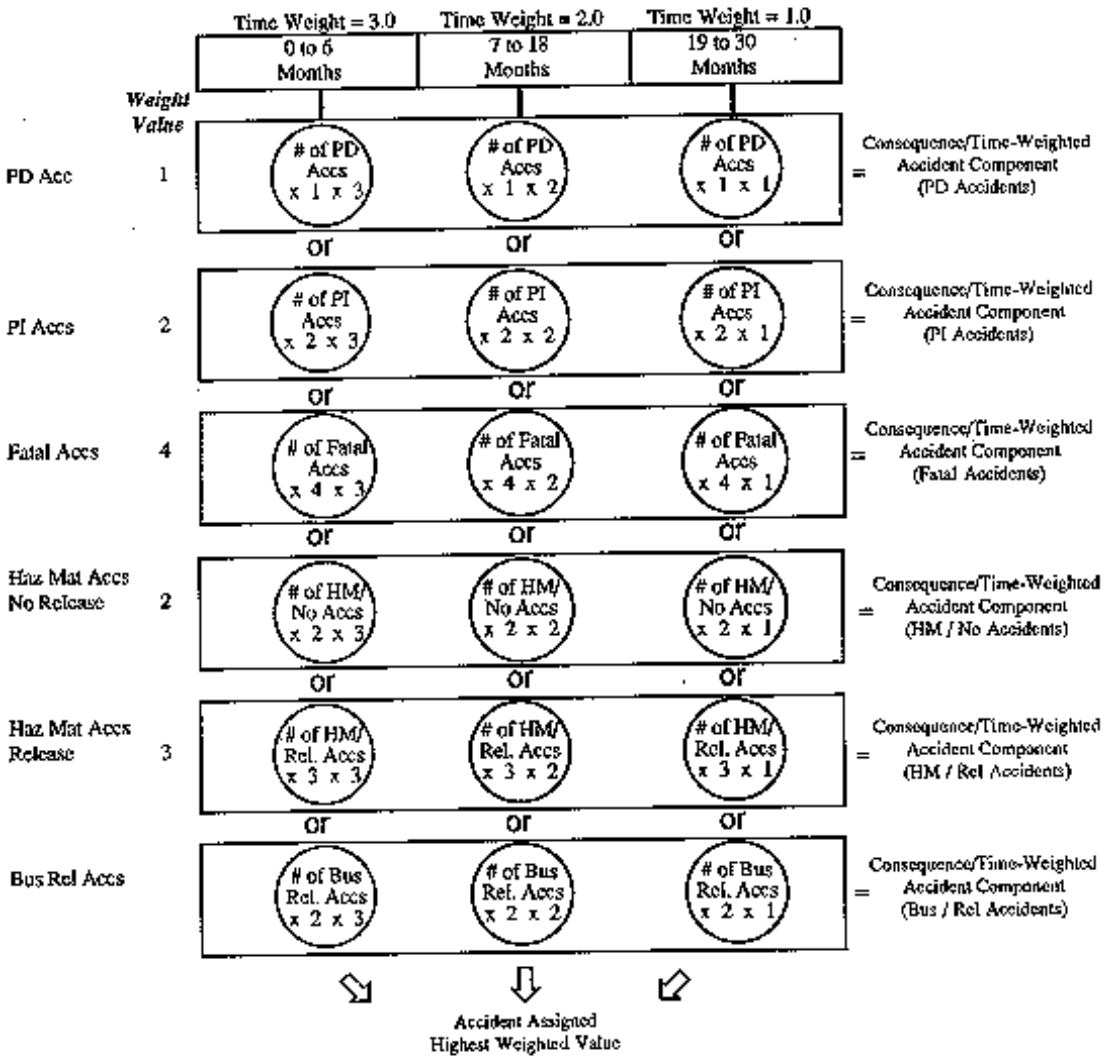
Missouri Department of Revenue
Quentin Wilson, Director
301 West High Street
Jefferson City, MO 65101
573-751-4450
Web Page Address: http://www.services.state.mo.us/dor/

Appendix A

ACCIDENT SEA

1. Omit carriers having no accidents.
2. For each carrier, calculate the Accident SEA Score by using the following procedures:

Step 1 Analysis



$$\sum \frac{\text{Accident \#1 Weight} + \text{Accident \#2 Weight} + \text{Accident \#n Weight}}{2} = \text{Accident Involvement Measure (AIM)}$$

PRODUCT COMPARISON RANKING OF POSSIBLE ACCIDENT SEA CONSEQUENCE/TIME WEIGHTS
ALTERNATIVE

Accident Type	Accident Wt	or	Hazmat Release Wt	or	Hazmat No Release Wt	or	Bus Rel Wt	=	Largest Value	X	Time Wt	=	Consequence Time Wt
Fatal 0 to 6 Months Haz Mat - Released	4		3		0		0		4		3		12
Fatal 0 to 6 Months Haz Mat No Release	4		0		2		0		4		3		12
Fatal 0 to 6 Months Bus Related	4		0		0		2		4		3		12
Fatal 0 to 6 Months	4		0		0		0		4		3		12
Personal Injury 0 to 6 Months Haz Mat Released	2		3		0		0		3		3		9
Property Damage 0 to 6 Months Haz Mat Release	1		3		0		0		3		3		9
Fatal 7 to 18 Months Haz Mat - Release	4		3		0		0		4		2		8
Fatal 7 to 18 Months Haz Mat No Release	4		0		2		0		4		2		8
Fatal 7 to 18 Months Bus Related	4		0		0		2		4		2		8
Fatal 7 to 18 Months	4		0		0		0		4		2		8
Personal Injury 0 to 6 Months Haz Mat No Release	2		0		2		0		2		3		6
Personal Injury 0 to 6 Months Bus Related	2		0		0		2		2		3		6
Personal Injury 0 to 6 Months	2		0		0		0		2		3		6
Personal Injury 7 to 18 Months Haz Mat Release	2		3		0		0		3		2		6
Property Damage 0 to 6 Months Haz Mat No Release	1		0		2		0		2		3		6
Property Damage 7 to 18 Months Haz Mat Release	1		3		0		0		3		2		6
Property Damage 0 to 6 Months Bus Related	1		0		0		2		2		3		6

Accident Type	Accident Wt	+	Hazmat Release Wt	+	Hazmat No Release Wt	+	Bus Rel Wt	X	Time Wt	=	Consequence/ Time Wt
Property Damage 7 to 18 Months Haz Mat No Release	1		0		2		0		2		6
Property Damage 7 to 18 Months Bus Related	1		0		0		2		2		6
Fatal 7 to 18 Months	3		0		0		0		2		6
Personal Injury 0 to 6 Months	2		0		0		0		3		6
Personal Injury 19 to 30 Months Haz Mat Release	2		3		0		0		1		5
Fatal 19 to 30 Months Bus Related	3		0		0		2		1		5
Fatal 19 to 30 Months Haz Mat No Release	3		0		2		0		1		5
Property Damage 19 to 30 Months Haz Mat Release	1		3		0		0		1		4
Personal Injury 7 to 18 Months	2		0		0		0		2		4
Personal Injury 19 to 30 Months Bus Related	2		0		0		2		1		4
Personal Injury 19 to 30 Months Haz Mat No Release	2		0		2		0		1		4
Property Damage 19 to 30 Months Haz Mat No Release	1		0		2		0		1		3
Fatal 19 to 30 Months	3		0		0		0		1		3
Property Damage 0 to 6 Months	1		0		0		0		3		3
Property Damage 19 to 30 Months Bus Related	1		0		0		2		1		3
Property Damage 7 to 18 Months	1		0		0		0		2		2
Personal Injury 19 to 30 Months	2		0		0		0		1		2
Property Damage 19 to 30 Months	1		0		0		0		1		1

ACCIDENT SEA
Step 2 Analysis

Percentile Ranking
Based on 100 points